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Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY



This Issue--

- S. M. P. E. Convention Program
- Amateur Movie Competition

**OCTOBER
1949**

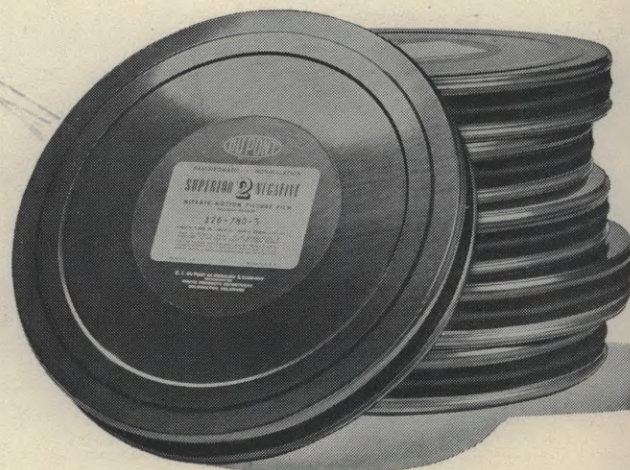


THROUGHOUT THE INDUSTRY, leading cinematographers in the best-known studios endorse Du Pont "Superior" 2 all-purpose negative stock. Its extremely wide latitude provides ample speed to capture the subject under difficult conditions of high or low key lighting. E. I. du Pont de Nemours & Co. (Inc.), Photo Products Department, Wilmington 98, Delaware. New York—Los Angeles—Chicago.

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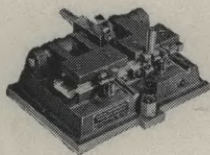


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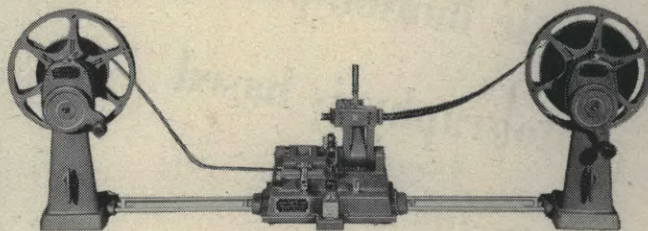
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Straight-across frame line cut, base heater, Carboloy-tipped scraper blades...all the outstanding features of the FILMO-PRO Splicer (above) have been adapted to 35mm-16mm editing in this new . . . and portable professional model. Occupies $10\frac{1}{2}$ " x $8\frac{1}{2}$ " x $4\frac{3}{4}$ " of bench space. Weighs only $12\frac{1}{2}$ pounds. Write for full details today!

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AMERICAN SOCIETY OF CINEMATOGRAPHERS

FOUNDED January 8, 1919, The American Society of Cinematographers is composed of the leading directors of photography in the Hollywood motion picture studios. Its membership also includes non-resident cinematographers and cinematographers in foreign lands. Membership is by invitation only.

The Society meets regularly once a month at its clubhouse at 1782 North Orange Drive, in the heart of Hollywood. On November 1, 1920, the Society established its monthly publication "American Cinematographer" which it continues to sponsor and which is now circulated in 62 countries throughout the world.

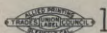
Dominant aims of the Society are to bring into close confederation and cooperation all leaders in the cinematographic art and science and to strive for pre-eminence in artistic perfection and scientific knowledge of the art.

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AMERICAN

Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

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OCTOBER • 1949

NO. 10

CONTENTS

ARTICLES

- S.M.P.E. CONVENES IN HOLLYWOOD OCTOBER 10TH TO 14TH . . . 354
THE PROBLEMS OF LIGHTING AND PHOTOGRAPHING "UNDER
CAPRICORN"—By Jack Cardiff, A.S.C. . . . 358
THEY DO IT WITH INFRA-RED!—By Leigh Allen . . . 360
THE MAGIC OF MONTAGE—By Herb A. Lightman . . . 361

TELEVISION PHOTOGRAPHY

- BALANCING TELEVISION CAMERA TUBES—By Ralph Lawton . . . 362

16MM. AND 8MM. CINEMATOGRAPHY

- NOT ALL ARTISTS PAINT!—By Arthur Edeson, A.S.C. . . . 365
HIS BETTER MOUSETRAP WAS A HOMEMADE MOVIE—
By Adeline Rice . . . 366
TIGER TAPE—By Paul E. King . . . 369

FEATURES

- HOLLYWOOD BULLETIN BOARD . . . 356
CURRENT ASSIGNMENTS OF A.S.C. MEMBERS . . . 384

ON THE COVER

GILBERT WARRENTON, A.S.C. (behind camera), lines up a shot for "The Human Bridge," half-hour 16mm. industrial film produced in Kodachrome by Raphael G. Wolff Studios, Hollywood, for Ford Motor Company. Scene is corner of vast Ford River Rouge Plant in Dearborn, Michigan, where Warrenton spent three months shooting scenes for the picture. The camera is a Maurer 16mm. Professional.

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S.M.P.E. Convenes In Hollywood October 10th to 14th

Tentative program for five-day session includes important technical papers on motion picture color processes, high-speed photography, magnetic recording and television.

MEMBERS of the Society of Motion Picture Engineers, many of whom also are members of the American Society of Cinematographers, will hold one of their most important and significant semi-annual conventions in Hollywood this month. Members from all over the U. S. will convene in the film city October 10th for a five-day session at the Hollywood Roosevelt Hotel, just a block away from the A.S.C. Clubhouse.

From the list of papers and demonstrations already set on the program of 10 technical sessions scheduled for the five-day get-together, and the large number of reservations received from distant points, the convention looms one of the greatest ever held by the Society on the West Coast.

S.M.P.E. committee chairmen include Sid Solow, A.S.C., in charge of local arrangements for convention; Watson Jones, reservations committee; Herbert Griffin, transportation; Harold Desfor, publicity; C. W. Handley, registration and information; J. P. Livadary, luncheon and banquet; Lee Jones, membership and subscriptions; Mrs. Peter Mole, ladies' reception committee; Lloyd Goldsmith, 35mm. projection, and H. W. Remerscheid, 16mm. projection.

PROGRAM

(Subject to Change)

MONDAY MORNING • OCTOBER 10

9:30 REGISTRATION, Mezzanine Floor
Advance sale of luncheon and banquet tickets. Registration for transportation to Mt. Wilson and Dinner at the Mt. Wilson Hotel on Thursday.

MONDAY NOON

12:30 Luncheon, Blossom Room

EARL I. SPONABLE, *Presiding*

GUEST SPEAKER: An eminent authority in the field of Motion Pictures.

MONDAY AFTERNOON

3:00 BUSINESS SESSION, Blossom Room
4:30 REPORT of Color Committee

MONDAY EVENING

8:00 TECHNICAL SESSION — Color, Blossom Room

Session will open with a motion picture color film.

8:10 An Experimental 35mm. Multilayer Stripping Negative

JOHN G. CAPSTAFF, *Eastman Kodak Company*

Describes a multilayer negative film for color motion pictures from which two layers are separately wet-stripped onto special transfer supports before development.

Photography in the Rocket Test Program

CARLOS H. ELMER, *U.S. Naval Ordnance Test Station*

The bulk of the data obtained from rocket and guided missile firings is recorded photographically. This paper describes the special types of equipment used at Inyokern.

Depth Perception in Color Photography

RALPH M. EVANS, *Eastman Kodak Company*

TUESDAY MORNING • OCTOBER 11

9:30 REGISTRATION, Mezzanine Floor

Advance sale of Banquet Tickets.

Register for transportation to Mt. Wilson and dinner at Mt. Wilson Hotel.

10:00 TECHNICAL SESSION — Color, Blossom Room

Session will open with a motion picture short.

10:10 Color Cinematography in the Mines

M. CHARLES LINKO, *Mode-Art Pictures, Inc.*

The many and varied conditions under which it was necessary to photograph a series of color films in a number of assorted mines are described as are the methods used to overcome them.

Color Temperature—Its Meaning in Color Photography

ORAN E. MILLER, *Eastman Kodak Company*

This is a tutorial discussion of the color temperature concept and its application to color photography.

Current Developments in Color Film Sensitometry

FRANKLIN C. WILLIAMS, *Kodak Research Laboratories*

TUESDAY AFTERNOON

1:30 REGISTRATION and advance sale of Banquet Tickets, Academy Award Theatre Lobby

Register for transportation to Mt. Wilson and dinner at Mt. Wilson Hotel.

2:00 TECHNICAL SESSION — Color and Lighting, Academy Award Theatre

Session will open with a Motion Picture Short.

2:10 35mm. Ansco Color Theatre Prints From 16mm. Kodachrome

ADRIAN MOSSER, *Filmeffects of Hollywood and LINWOOD DUNN, RKO Pictures, Inc.*

Paper describes one of the successful methods of bringing the 16mm. motion picture to the 35mm. screen in color.

Cinecolor Three Color Process

ALAN M. GUNDELFINGER, *Cinecolor Corporation*

The basic chemical reactions, spectral characteristics of the dyes and types of machines utilized in the film processing are discussed in detail. The entire Cinecolor three color process is described.

A Production Type Color Scene Tester

FRANK P. HERRNFELD, *Ansco*

Effects of Incorrect Color Temperature on Motion Picture Production

FRANK F. CRANDELL, KARL FREUND AND LARS MOEN, *Photo Research Corporation*

Past efforts to systematize control of film production (and especially color) have been partially defeated by inability to detect variations of color temperature of daylight and artificial light sources. Effects of such variations on tone or color of makeup, costumes and sets are cited.

Study of Sealed Beam Lamps for Motion Picture Set Lighting

WAYNE E. BLACKBURN, *Motion Picture Research Council, Inc.*

Recent Developments on Mercury Cadmium Compact Source Photographic Lighting Equipment

H. K. BOURNE AND C. G. HEYS HALLETT, *Mole-Richardson Ltd., London, England*

The most recent British development in compact source lighting equipment for motion picture studios are described.

Color Measurement of Carbon Arc Craters and Motion Picture Screen Light

R. E. HARRINGTON AND F. T. BOWDITCH, *National Carbon Co.*

The Stroboscope As A Light Source for Motion Pictures

ROBERT S. CARLSON, *University of Mississippi*

HAROLD E. EDGERTON, *Mass. Institute of Technology*

The Cine Flash, A New Lighting Equipment for High Speed Cine Photography and Studio Effects

H. K. BOURNE, *Mole-Richardson Ltd., London, England*; and E. J. G. BEESON, *British Thompson Huston Com., Ltd, Rugby, England.*

A new form of portable lighting equipment is described which has been designed especially to meet the needs of the high speed cinemographer who is always faced with the difficulty of obtaining sufficient light.

TUESDAY EVENING

8:00 TECHNICAL SESSION — Color, Academy Award Theatre

Session will open with a Motion Picture Short.

8:10 Synthetic Color-Forming Binders for Photographic Emulsions

I—Development of the binders and techniques for their Application.

W. A. STANTON, E. I. du Pont de Nemours & Company

Color coupling development is one means of creating a dye image in proportion to a photographic image. Several processes have previously been developed that make practical use of this principle.

II—Structure and Properties of a Release Positive Color Film. Type 275.

W. A. STANTON, E. I. du Pont de Nemours & Company

Du Pont Type 275 is a release positive color film designed for making three-color prints from separation negatives.

III—Exposing Type 275.

J. D. WEISS, E. I. du Pont de Nemours & Company

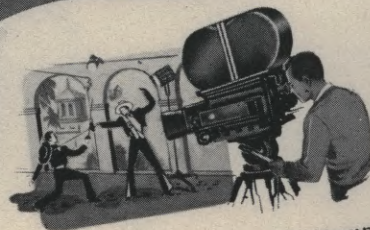
IV—Processing Type 275.

J. P. WEISS, E. I. du Pont de Nemours & Company

(Continued on Page 374)

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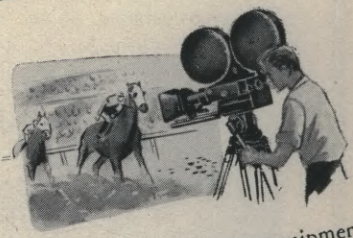
AMERICAN BUSINESS needs top quality films to promote sales, educate employees, create good will and inspire a better way of American Life. Today, more and more of the nation's business leaders specify modern, sure Mitchell equipment.



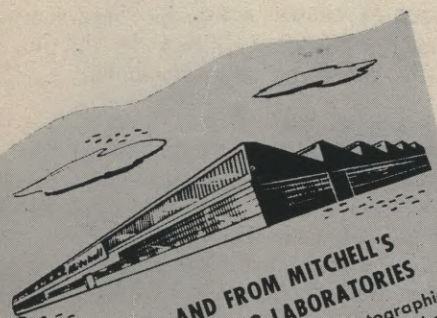
GOVERNMENT SERVICES set high specifications for photographic equipment. Time after time, precision perfect Mitchell 16mm and 35mm products have been selected for purchase by United States and Foreign Governments.



NEWS SERVICES require fast, versatile photographic equipment for "on the spot" coverage. Working under pressure, in a field where retakes are unknown, Mitchell has lived up to its reputation for dependability and accuracy.



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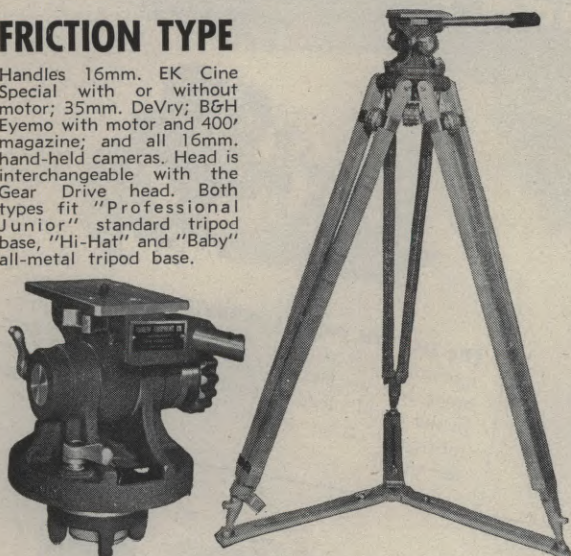
85% of the motion picture industry uses Mitchell cameras.

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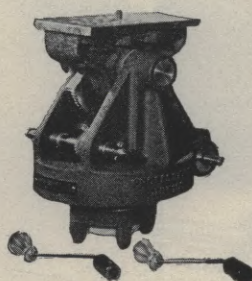
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Handles 16mm. EK Cine Special with or without motor; 35mm. DeVry; B&H Eyemo with motor and 400' magazine; and all 16mm. hand-held cameras. Head is interchangeable with the Gear Drive head. Both types fit "Professional Junior" standard tripod base, "Hi-Hat" and "Baby" all-metal tripod base.



GEAR DRIVE

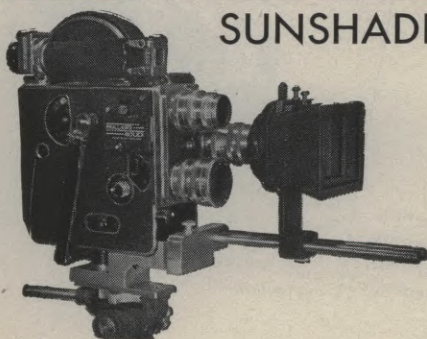
The head, made of Dow Metal magnesium, weighs but 5½ lbs. and is interchangeable with the Friction type head. It handles all types of cameras. Snap-on metal cranks control pan and tilt action from both sides. Worm-driven gears are Gov't spec. bronze.



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BLIMP for 16mm. E. K. CINE SPECIAL

This Blimp constructed of Dow Metal magnesium, is thoroughly insulated to afford absolute silent operation. Exclusive features: Follow focus mechanism permits change of lens focus while camera is operating in blimp. Blimp takes synchronous motor drive which couples to camera. A dovetail bracket is provided to mount an erect image viewfinder.



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MILTON KRASNER, A.S.C., received the International Critics' Grand Prize for motion picture photography in the 1949 Film Festival held last month in Cannes, France. Award was for his lensing of RKO-Radio's "The Set-up." Borrowed from Fox by RKO, Krasner recently completed photography on "Christmas Gift" for the same studio.

CLIFFORD STINE, A.S.C., once one of RKO's ace special-effects photographers, assumed his first major assignment as director of photography at Universal last month on U-I's "Outside The Wall." Previously he had done special photography and second unit work on two other Universal productions.

SNEAK PREVIEWED at the A.S.C. clubhouse recently was the motion picture industry's short subject, "The Cinematographer," dealing with the work of the directors of photography. In the star role as director of photography was a real director of photography — Karl Struss, A.S.C. — whose performance was in the best professional tradition. The film has been excellently conceived, produced and photographed and will do much to enlighten theatre-goers on the important role the director of photography plays in the production of motion pictures.

GUS PETERSON, A.S.C., has been summoned to C.B.S. to direct the lighting on the Ed Wynn television show.

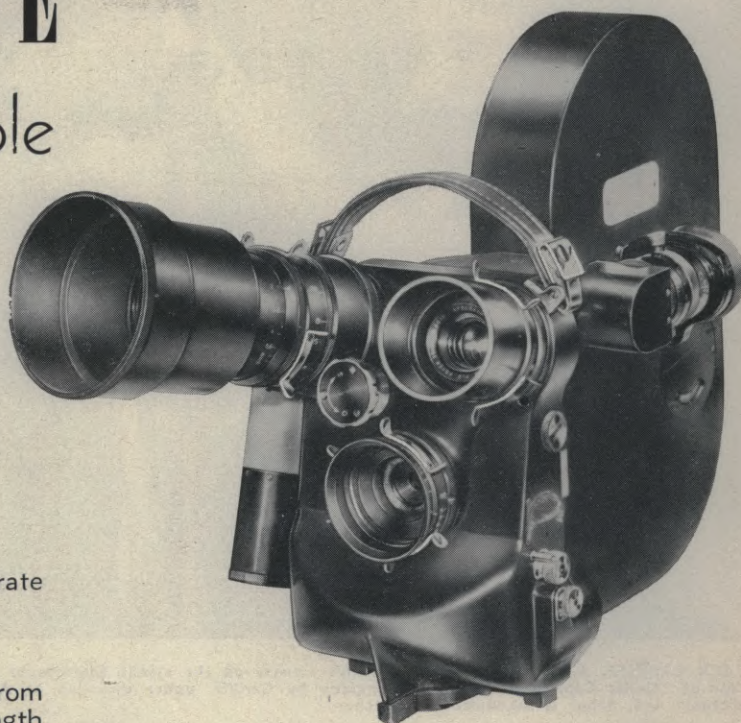
JOSEPH WALKER, A.S.C., one of Columbia Pictures' ace cameramen, has perfected the Electra-Zoom vari-focal lens for use on television cameras. Lens is said to operate on optical principles different than the Zoomar, already in use by some TV stations. The Electra-Zoom has an aperture of f/3.1 with a focal length varying from three to eight inches. The fast speed of this lens and its small size—less than 12 inches long—makes it fully satisfactory for interior TV studio work. It is push-button controlled by the camera operator.

CHARLES ROSHER, A.S.C., whose photography of M-G-M's "Red Danube" is being widely acclaimed, journeyed to San Francisco last month, along with other M-G-M luminaries, to appear in

(Continued on Page 373)

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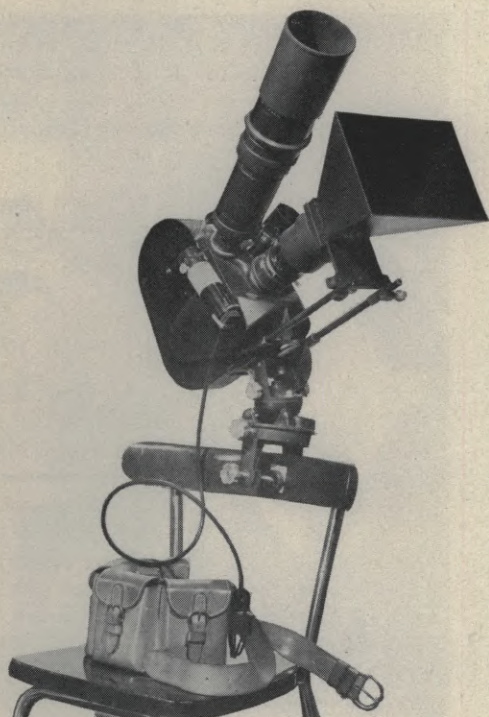
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EASE OF OPERATION — The extreme lightness (camera with 3 lenses, 400 foot magazine and motor weighs only 14 lbs.) and unique shape designed to fit the body makes for ease and steadiness in operation.

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JACK CARDIFF, A.S.C., checks makeup man's artistry on the classic features of Ingrid Bergman, star of "Under Capricorn." Filmed in England by Cardiff, under direction of Alfred Hitchcock, picture's U.S. debut is scheduled for October.

The Problems Of Lighting And Photographing "UNDER CAPRICORN"

By JACK CARDIFF, A.S.C.

I SHOULD have known better. An assignment with such a zodiacal title as "Under Capricorn" should have warned me not to be too elated at face values; but when the face was Ingrid Bergman's and the director Alfred Hitchcock, I surely couldn't help hugging the Capricornus goat, dreaming cosily of big, big, close-ups of La Bergman, and devising cunning gymnastics with Hitch the Master.

Of course there was a catch—a deadly one. To illustrate: "I want a cameraman. You there, Al Splonks, A.S.C., will you come up on the stage a moment? Thank you.

"So you think you're good? Right. Here's Miss Bergman. Apotheosis of beauty: perfect bone structure, cheek bones that camber exotically, eyes that smile right through a thin negative, and the supple-firm lips of Aphrodite. Now, Mr. Splonks, she's all yours. You can

paint her with lights; a big, big, close-up. At least you *start* with a big closeup; then you must track way back to a long shot of a dining room, track and pan around for a few minutes, track into a few other rooms. . . . Yes, that's what I said Al, say about *five* other rooms, including a circular stairway, and you crane up this stairway into a room upstairs, back again, and down into the dining room. Yes, that's one shot, Al.

"Remember *"Rope"*? Well, this is the same technique, but with a composite six-roomed house and we move through walls that open into, sometimes, as many as six rooms in one scene.

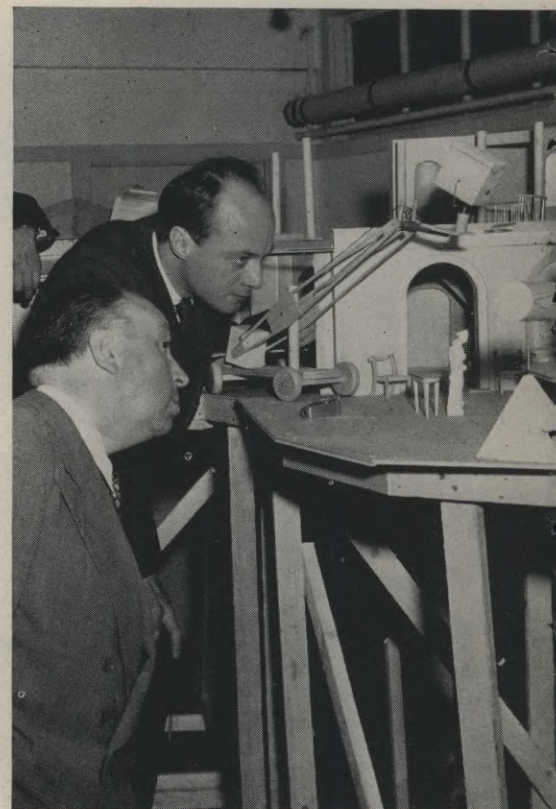
"As you see, it calls for a 35mm. lens, so for Miss Bergman's close-up your camera must be only about 18 inches away from her face. Yes, Al, a 35mm. lens is not very good for a close-up. You want to use a 50mm.? Well, I did, too, but think of those other five sets we go

into, Al; so for this one we'll have to use a 35mm. Yes, that's a Technicolor blimp—big, isn't it? And when 18 inches away from a beautiful face, there isn't much room. Why the lens shade practically touches her nose! Well, you must manage somehow; there'll be trouble if we throw away our lens shade!

"Now, all your special little lamps for close-up lighting must fly away as we track, and they have to fly really fast to beat that circuitous electric crane and the electric fly-away walls, and the ceilings that lower into place, and the table, cut into fourteen sections, which frantically jig-saws in and out of position as we surge through it—backwards and forwards! Oh, another thing, Al. Miss Bergman mustn't look *too* beautiful in the first few reels—she plays a wan dipsomaniac . . . You too, Al? Well, let's open another bottle before we start the next scene."

Now that "Under Capricorn" is just a memory, I can view it with a wider perspective, especially as I have just finished a movie employing the antithesis in technique; "*Black Rose*" has only *one* dolly shot in nearly 900 scenes!

We prepared "Under Capricorn" in the ideal theoretical manner. It started with a three-man conference: Hitch, art director Tom Morrahan, and myself. For one week we listened to Hitch out-



LARGE MODEL of composite set, complete with scale actors, furniture and even scale lights, enabled Cardiff and Hitchcock to map every camera movement in advance. Hitchcock's "long take" technique was employed throughout the picture.

line the plot, and watched his expressive hands draw every set-up in the picture on paper already prepared with frame lines. Hitch always places the positions of faces first, as he considers that framing a correct pattern of the principal faces on the screen is a most important part of dramatic structure. With a swift and confident movement he makes a simple oval for a face, with a T form to represent nose and eyes; placing the T either in the center or on one side, to represent full face, or three-quarter, and it is astonishing how concise this method of face-structure can be. Then the background is drawn in, and at the end of each sequence—or reel—the art director and myself have made copious notes effecting economy of set building and lighting arrangements. We continued our planning with a large model of our composite set, using scale actors, furniture and even scale lights. With a perfect miniature replica of our crane we mapped out every camera movement exactly, so that at least we knew what we were up against, and I hardly need say that I viewed the job ahead with as much tranquility as a premeditated fight with an octopus! Looking back on it all, I'm not so sure I wouldn't have preferred the fight with the octopus.

A normal studio floor was useless for smooth and silent dollying in any direction so, as on "*Rope*," we had to build a special floor. But of course our area in this case was much greater for a large Georgian house and garden. First a two-inch thickness of asphalt was heated and set over the floor, then came a layer of felt, and this was in turn covered with carpet. Imagine, at austerity time in Eng-

land with carpet strictly rationed, we covered our studio floor with one huge carpet, which measured 150 feet by 80 feet! Our composite set was now built on the carpet and it was really a work of art, with practically every wall and even ceilings made to move silently away at the press of a button. This floor, silent and level both outside and in, was now treated for various surface effects, i.e., aubusson carpet, marble, gravel exterior, etc.

As I mentioned earlier, we cut a large Regency table into 14 divisions, laterally and vertically, so that we could crane right through it as if it didn't exist. Each division was snatched away at the very last second as the crane surged through in hot pursuit of the actors prancing from room to room. This was a noble sight: a gang of men frantically dodging the camera in a mass like a football scrum, each with a tiny section of a table in his hands. The actors often helped and as the camera approached them seated nonchalantly enough, it looked positively weird to see them suddenly grab a section of a table, with a candle or a plate of food fixed on to it, and fall wildly out of picture into the perspiring melee with their own parts of the table clutched in their hands.

The rigging of lamps was also a headache. More than 200 lamps had to be rigged so they could be altered for various sequences. My lights were fixed up on cranes, dollies, and even on old "mike" booms, so that I could move them silently during the scene. It was a fantastic sight to see a lamp silently glide in through a window, or even through a hole in the wall, twist and tilt and pan in several

directions, then just as mysteriously disappear again. I usually had several electricians running or crawling alongside my camera with 5 kw lamps strapped to their shoulders and often they had to wriggle in flat on their tummies—sometimes colliding disasterously—and having done their work wriggle out again before the monster crane mowed them down!

In a bedroom scene, we came through a window (jerked out by wires), followed Michael Wilding towards a four poster bed, on which Miss Bergman was reclining. This bed was a very strange bed: it had machinery that enabled it to tilt forward about 45 degrees, and we could thus effectively look "down" on her without going high and tilting our Titan blimp. (Miss Bergman performed a remarkable feat in acting and maintaining equipoise on a bed which performed silent see-saws!) All four posts of the bed came away during the scene and we could dolly in to enormous close-ups. I had sliding panels cut in some walls to admit lights which disappeared as the camera faced on them. I had men with lamps strapped to them, hiding behind doors: after the camera had passed through, they would then creep away. At one time, I had six sets lighted at once. This meant dashing from set to set, checking up till the last moment, and we finished up with three gaffers instead of the usual one. Everyone knows we have a labor problem in England. I leave it to the imagination of the reader when I say that out of the hundred odd electricians, many had been engaged without studio experience—some had never seen a studio before—and those had to work

(Continued on Page 382)



LIGHTS were rigged so they could be altered for various sequences. Lamps were fixed on camera crane, dollies, and even on old mike booms, so they could be moved silently during the long takes.



FILL LIGHT on most closeups was furnished by a special diadem of photofloods which Cardiff had rigged on his Technicolor camera, around the matte box. Photofloods proved valuable lighting source.



FILMING NIGHT EFFECTS in daylight is chief use of infra-red film in motion picture studios today. In Universal-International's "Sword In The Desert," for example, four-fifths of its footage consists of night scenes — most of them photographed in daylight with infra-red.

They Do It With Infra-red!

It's easier, more economical to shoot night scenes in broad daylight using infra-red film.

By LEIGH ALLEN

THE FILM INDUSTRY suddenly is taking sharp notice of a new brand of motion pictures being turned out by Universal-International's Hollywood studios. These new films differ from the familiar run-of-the-mill movie fare in two respects: the stories are factual and refreshingly new and the photography is startlingly different; the result: movies that are clicking like everything at boxoffices everywhere. And that's good.

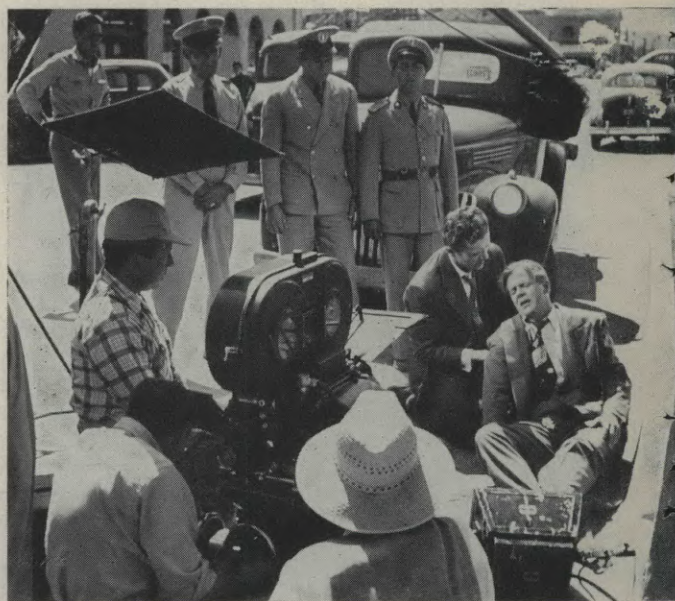
Probably the real "secret" behind it all is that studio's "discovery" of infra-red film. The film isn't new, by any means, but its successful use by Universal gives it new luster. Months ago the studio's production manager, Jim Pratt, chanced to see a film produced by another studio in which night scenes photographed with infra-red film played a dominant part. Pratt saw how shooting night scenes in broad daylight with I-R film, without need for costly lighting equipment that night shooting entails, added up to considerable savings. Besides, action

(Continued on Page 376)

ILLEGAL ENTRY — For this U-I production, based on experiences of U.S. Immigration Officials, much of the action takes place at night. William Daniels, A.S.C., who filmed it, shot night sequences at four large California air fields in broad daylight, using infra-red film.



SWORD IN THE DESERT — Irving Glassberg, A.S.C. (right) who directed the photography on this picture, made extensive hand tests with infra-red to insure consistency of exposures. Dana Andrews (left) and producer Bob Buckner examine one of the test strips.



JOHNNY STOOL PIGEON — For this U-I production, Maury Gertzman, A.S.C. (behind camera), shoots a night scene in bright sunlight, using infra-red film in the camera and a 29-F filter over the lens.



IN THE FRENCH motion picture industry, the word montage refers to the cutting or editing process, that operation in which each scene is actually "mounted" in its proper setting and relationship to the other scenes.

In American studios, however, the term montage has taken on quite a different meaning. It refers to a series of separate scenes rapidly cut, dissolved, or superimposed to convey a single unified impression. A purely cinematic device, it is capable of great versatility in production, and each Hollywood studio usually maintains its own montage department to create such sequences for the screen.

The most obvious use of the montage pattern is to condense a lengthy stretch of time or action into a small amount of footage, without slighting the meaning of the transition itself. For example, a man might be shown boarding a train in a certain locale, after which, in fragmentary scenes, we see various shots of him in different attitudes intermingled with scenes showing an ocean liner gliding along, an airplane flying through the sky, and the man finally landing at a far-removed locale. Thus, in the shortest possible space of time, our hero has taken a long and diversified trip—a journey complicated enough, in fact, to require the use of three different types of transportation. With the montage method, we can take him from one locale to another quickly and easily without minimizing the scope of his migration.

Similarly conceived is the type of montage used merely to show the passage of time, a pattern which has become almost a *cliché* of film technique. Such a montage usually involves shots of progressive plot action interspersed with scenes of leaves falling from a calendar, newspaper headlines, zooming dates, or other similar time-passage symbols.

The above examples indicate the two most obvious uses of the montage pattern. Applied in broader scope, however, montage can summarize an entire historical epoch, a lengthy technical process, or a specific phase of a person's life. It can add up to a full and detailed impression without consuming an undue amount of footage.

But the potentiality of the montage goes far beyond the mere utilitarian expedient of condensing time or action. In itself, properly used, it is a potent dramatic device peculiarly suited to the scope of the cinematic medium. It is capable of conveying to the audience certain subtleties of mood and characterization which could not be as aptly portrayed in any other way. Used subjectively, for example, it can present a situation as it appears to a specific character in the story. This impression may

be colored by the character's peculiar point of view or by his emotional outlook at that point in the plot. In a sense, the camera "crawls inside the mind" of the character, and shows a situation not as it actually exists but as it appears from a frankly biased point of view. A child's world, for example, could be neatly projected by a montage of low camera angles simulating the viewpoint of the child as he constantly looks up at elements of the world around him.

In a film based on a psychological theme, montage is quite often used to portray the confused or abnormal state of mind of one of the characters. A monumental example of this technique was the beautifully conceived montage which appeared several years ago in the film "Blues In The Night." In this film, an almost surrealistic pattern of distorted

shots of musical symbols forcefully portrayed the nervous breakdown of the main character, a musician. More recently, in such films as "The Lost Weekend," and "The Snake Pit," similar montages were used to interpret the hallucinations of the protagonists. In the latter film especially, a most effective montage utilized shots of ocean waves and breakers to symbolize an emotional crack-up. Fortunately, the director of the film resisted the natural impulse to carry such a montage to exaggerated lengths.

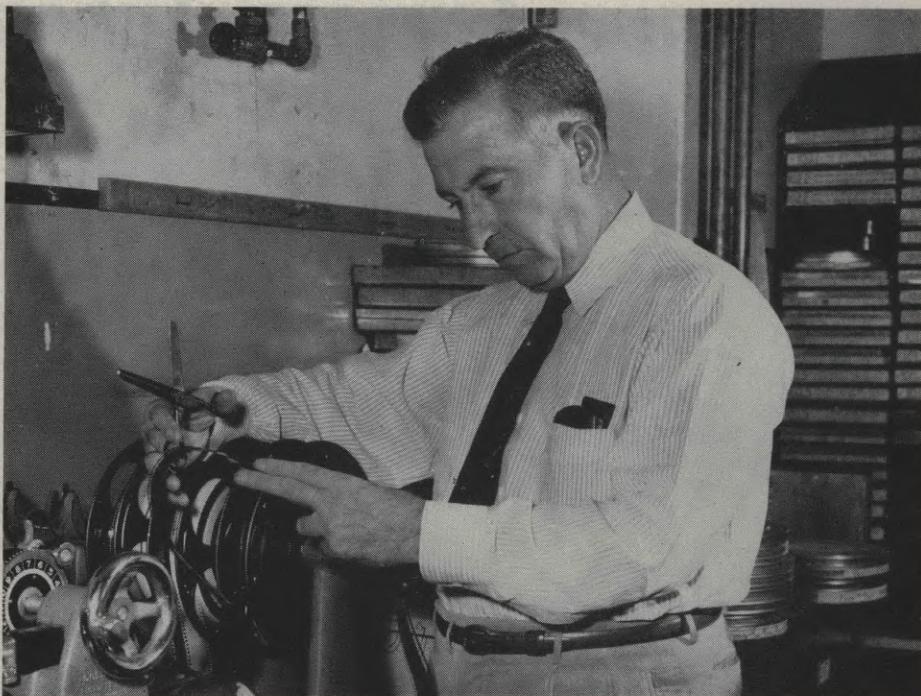
Quite often, montage is used with telling effect to produce a stylized impression of a normal sequence of events. A classic example is the brilliantly conceived cut montage used in the recent film, "Champion," to sum up the train-

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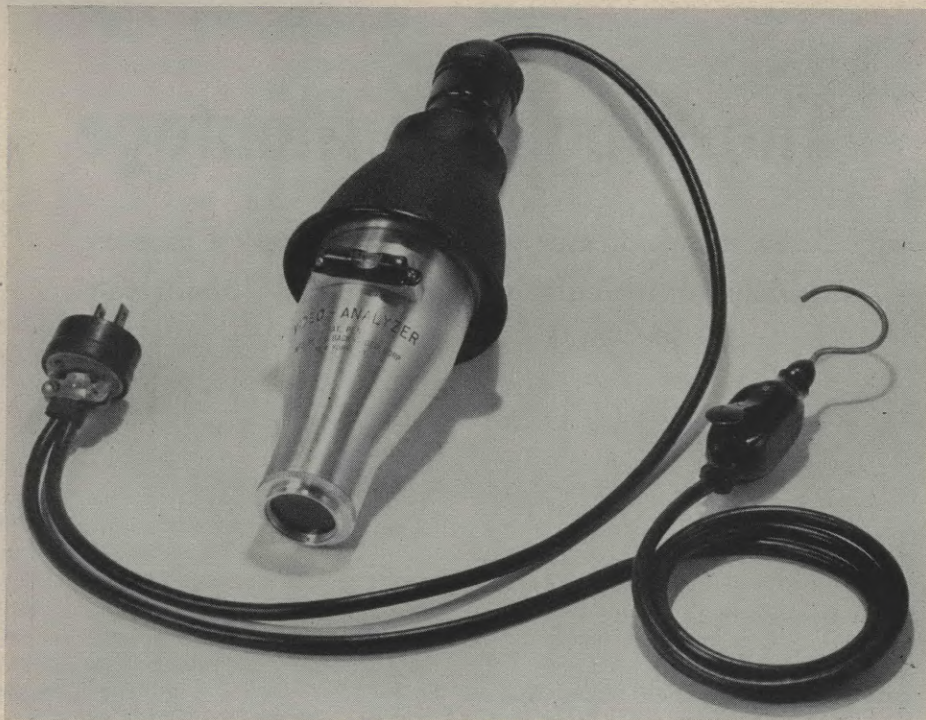
The Magic Of Montage

Correctly used, montage approaches pure cinema, visually advancing the dramatic story without calling attention to the mechanical effects involved.

By HERB A. LIGHTMAN



CREATION of a montage is a highly specialized process, involving special photography and skilled cutting in the editing stage. Montage experts first work out the visual pattern and proceed in the editing process to assemble the various scenes according to plan. Here, Roscoe Dale, film editor at Columbia Studios, ponders a cut in a sequence for "The Good Humor Man" soon to be released.



TO INSURE uniform results from image orthicon tubes, when more than one camera is used on a TV show, cameramen now may use this Video Analyzer to check each tube's color response, sensitivity and alignment, thus fit their cameras with tubes of insured uniformity.

Balancing Television Camera Tubes

New TV tube analyzer insures matched image orthicons for multi-camera television shows.

By RALPH LAWTON

GOOD TELEVISION images are born in the TV studio. They must start as well-illuminated subjects and then must progress through the lenses, the cameras, the electrical circuits, and the antenna system with a minimum of distortion. All along the video line, image resolution, definition, contrast, and brilliance must be maintained. Frequency distortion, electrical interference and amplifier noise should be minimized.

Most important link in the TV chain is the camera with its image orthicon. Its job is to transform faithfully the lights, the darks, and the grays into accurate signal-pulses. If it fails to do its job faithfully, no amount of monitoring and circuit juggling further along the line

can replace what the camera has lost. Perfect camera adjustment and alignment are the first major ingredients of top image quality.

Until now, because of the lack of adequate test equipment, TV cameramen and technicians have been unable to get the most out of their camera pick-up equipment. It has been impossible to match image orthicons accurately and to align and adjust cameras properly. The result: poor image quality regardless of lighting, staging and direction.

Unfortunately, the image orthicons available to TV stations are far from being uniform—they vary greatly in their response or sensitivity to light intensity and color. However, unless pick-up tubes

whose characteristics match are used in the cameras on a multiple-camera show, the quality and brilliance of the image will change every time a switch is made from one camera to another.

Many TV cameramen and technicians boast an uncanny ability to adjust their cameras for maximum results purely by feel. Perhaps some few, through long experience, are endowed with a sort of special "video sixth sense," but even they admit that they could do a more consistent job if they had some sort of testing device that would enable them to make an accurate and dependable step-by-step check-up of their camera tubes.

It appears that Dr. Frank G. Back, who developed the Zoomar lens for television, has come up with the very answer to their problem with his recently announced Video Analyzer. This gadget consists of a lightweight metal housing having a telescoping barrel that fits directly on the TV camera's 90mm. lens. Within this housing is an incandescent low-Kelvin rating light source, a specially designed precision transparent test pattern, and a calibrated correction lens. A "bubble level" on the top of the analyzer's housing makes it easy to adjust the built-in test pattern for perfect horizontal alignment.

The analyzer may be connected to any 110-volt source, including the utility outlet on the camera. The test pattern is illuminated by pressing the spring-tension hand switch. To eliminate any possibility of burning the test pattern into the target of the pick-up tube, the switch is never held closed for more than a few seconds at a time. Some image orthicons burn easily and some do not. The new bismuth tube (5826 and 5829) has much less tendency to burn in than the antimony surface tubes (5655 and 5769).

According to Dr. Back, the Video Analyzer provides the first accurate and complete means for:

1. Classifying an image orthicon tube according to its color sensitivity, light sensitivity, saturation point, and contrast range.
2. Accurately aligning and adjusting a TV camera.
3. Matching and balancing two or more camera chains to be used on the same TV show.

The Video Analyzer now makes it possible to calibrate each tube and provide it with a special code number that indicates at a glance its color characteristics, light sensitivity, saturation point (or peak level of illumination it will accommodate), and its contrast range.

By using the old haphazard method of balancing and adjusting cameras by focusing them on a large paper target

(Continued on Page 384)

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and purposes
ADVANCING
THE MOTION PICTURE
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and quality--

The Discriminating Engineer
depends upon
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MOTION PICTURE FILMS

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TO
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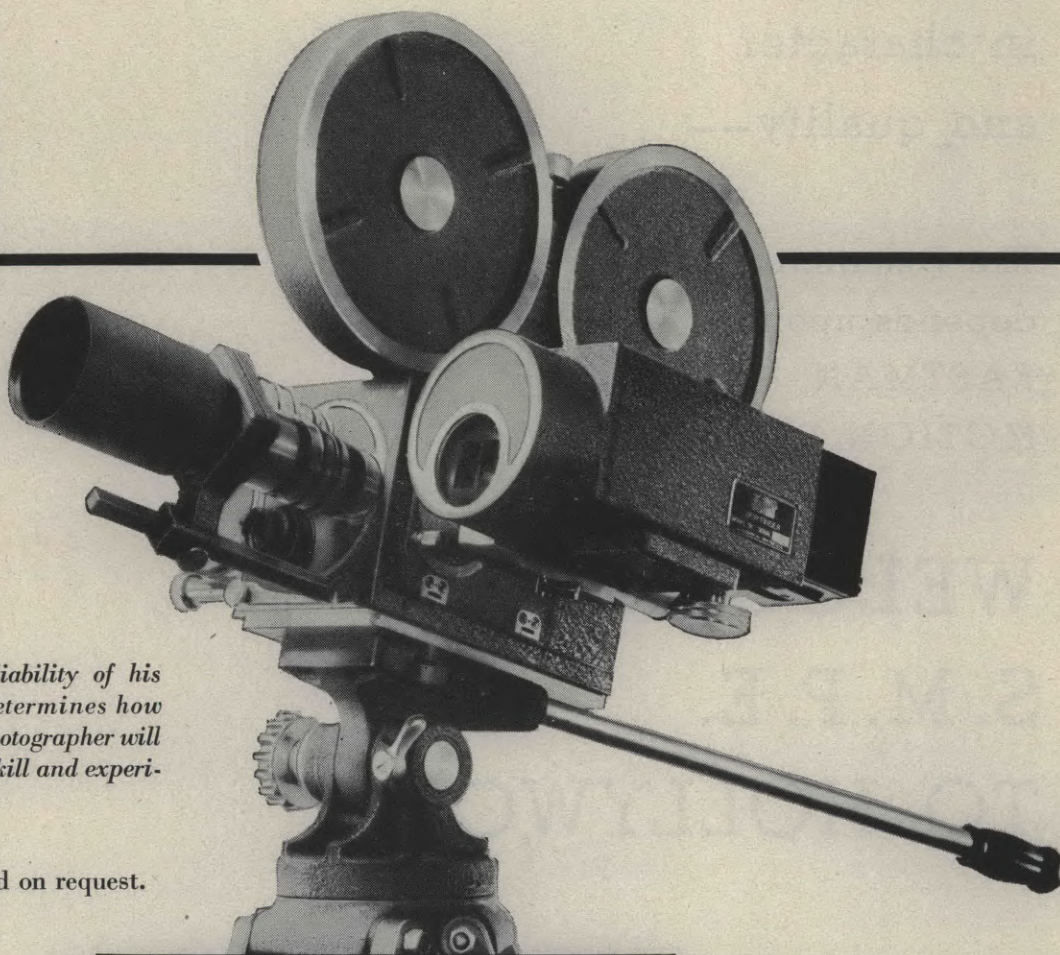
Operated under maximum temperatures and high humidity on tropical expeditions, it has given the same uniformity of performance as in studio shooting.

And it has met exacting tests and functioned perfectly in every respect at -65° F, producing the same fine results as when operated at normal temperatures.

It offers the photographer an unrivaled assurance of consistently high picture quality under any climatic condition.

The accuracy and reliability of his camera equipment determines how fully the experienced photographer will be able to transfer his skill and experience to film.

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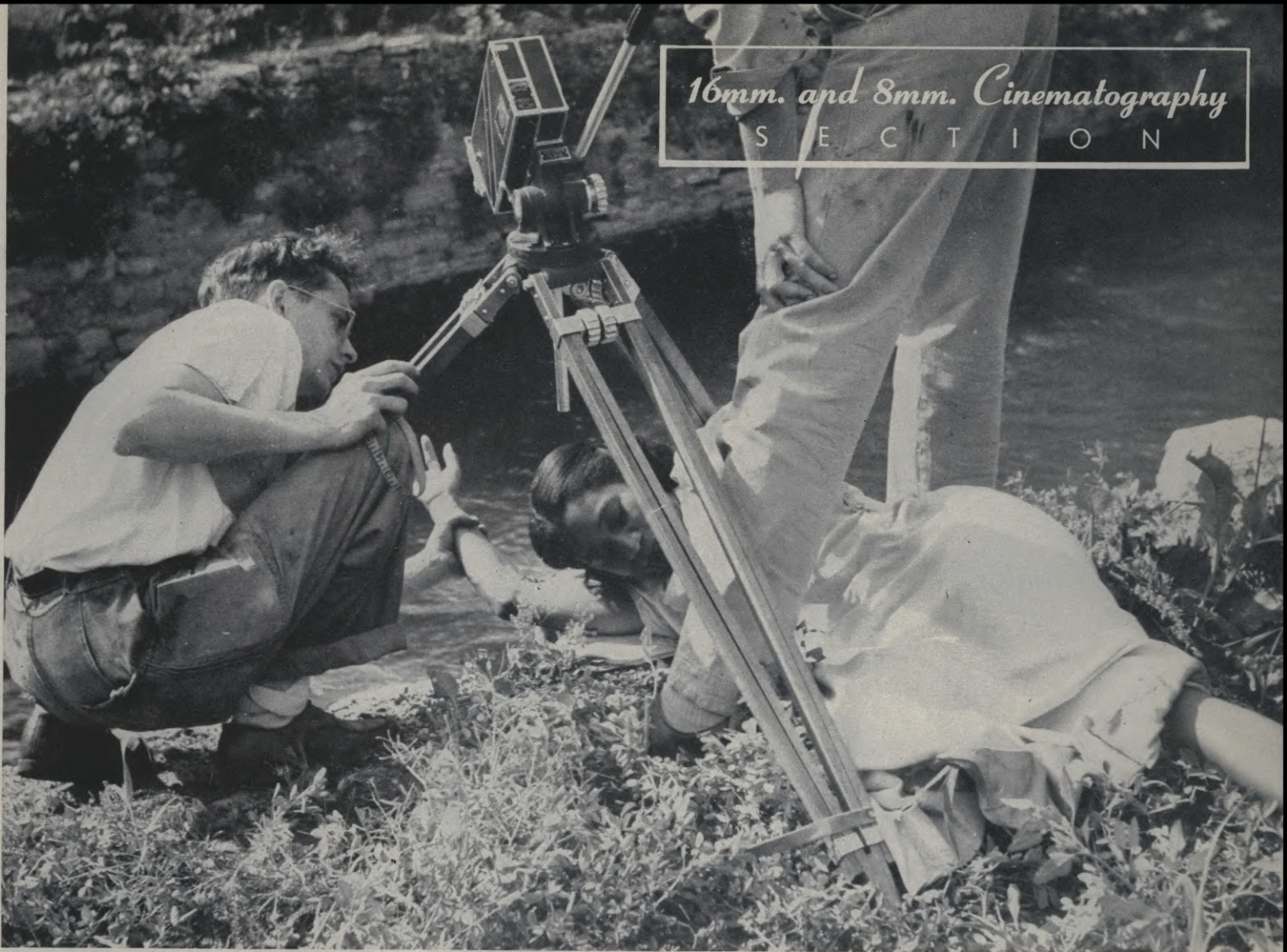


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16-mm Professional Production Equipment



TYPICAL of America's serious amateur movie makers is Gordon R. Ray (left), who, with his associates, Clifford Tierney, Jr., Eunice Brown and others, re-

cently filmed a compelling 16mm. picture based on expressive modern dance techniques. Above Brown is shown lining up a symbolic shot for picture.

Not All Artists Paint!

Many find self-expression in writing, acting and especially in photography. Your cine camera, thoughtfully used, can be the pleasurable means for expressing your creative talents, too.

By ARTHUR EDESON, A.S.C.

Vice President, American Society of Cinematographers

GIVEN a ciné camera, a great many people, young and old, succeed in finding expression for their creative talents, which they would be unable to do with paint brush or pen. Those who never could paint a canvas or pen a story find it easy to create entertaining pictures with light and shadow, using camera and film. The resultant artistic work, instead of hanging in art galleries or appearing on "best seller" lists, is

acclaimed in local and national amateur movie competitions.

Many owners of ciné cameras have yet to discover the outlet for their hidden talents their cameras afford. Admittedly, a great many of these cine cameraists are snapshooters—always will be—and have no desire to make any other kind of pictures. But it happens, with uncommon frequency, that one of their lot suddenly gets inspiration, perhaps while

watching his own movies on the screen, and with renewed enthusiasm sets out to make a picture that has real substance.

It is said that almost everybody has hidden creative talent, needing only inspiration to bring it to fruition. Behind department store counters, pumping gas in service stations, penning dull figures in bookkeeping ledgers, in fact in all walks of life are men and women capable

(Continued on Page 370)



TYPICAL amateur movie gadgeteer's equipment enabled Clyde Prusman to photograph microscopic movies that attracted attention of national educational film producer. Note how old automobile jack was converted into elevator for camera stand, and how odd bits of pipe, tubing, etc., were converted into lamphouse for the microscope.

His Better Mousetrap Was A Homemade Movie

How amateur movie maker Clyde Prusman's unusual biological movies led to a filming assignment for Coronet Films.

By ADELINE RICE

WHILE Cyde A. Prusman was making his movie "Life Through a Microscope," he did not think of Emerson's statement that if you build a better mousetrap, the world will beat a path to your door. Mr. Prusman was a supervising engineer with Commonwealth Edison of Chicago, and photog-

raphy was his hobby. Biology was another of his interests, amounting to a hobby, so it was only natural that he should combine the two in a biological movie.

He was fascinated by the world which he viewed through a microscope, finding it as full of hazards and adventure as

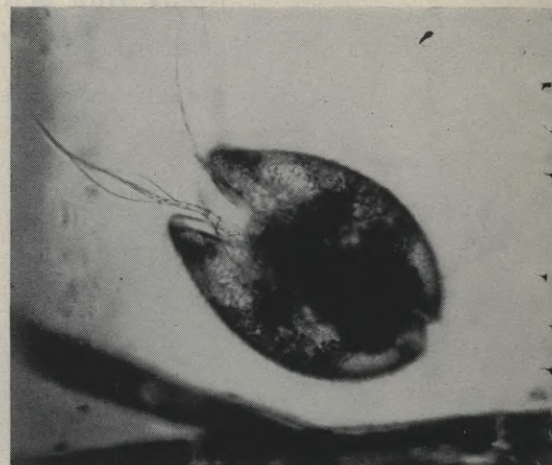
that of human beings traveling on a holiday. He cited the process by which the sluggish Amoeba surrounds and renders helpless, and ultimately digests, its more lively victims. But it is not easy to photograph subjects which are not static and are sensitive to light, which cannot take direction, and which must be photographed through the microscope lens from an area 1/100 of an inch or less in diameter.

"For this sort of photography one needs a device for viewing the image," he said. "Two questions must always be in mind: Is life present? Will it move out of the field too quickly? There are several viewfinders on the market, but the amateur who is ingenious and likes to tinker can make his own."

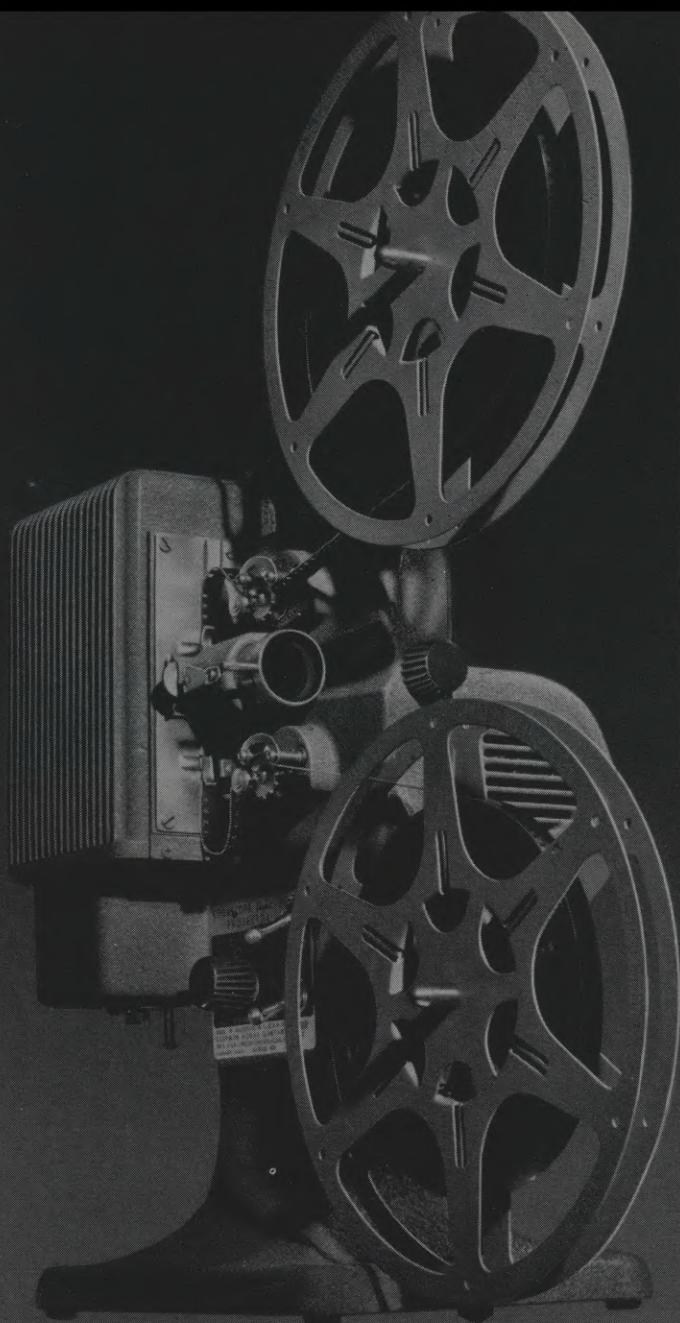
He began his experiments about 1942, working with an old 16mm. camera and a standard microscope, with black and white film. "I used, and still use, the ordinary achromatic microscope lens," he said. "In movie work one tends to use only the center of the field, and I find the achromatic lens quite satisfactory."

One evening in the summer of 1945 he showed his experimental film, "Life Through a Microscope," at a meeting of amateur movie clubs in Chicago at which some six or seven hundred people were present. Among these was a representative of Coronet Films, which features educational pictures. In October of that year Mr. Prusman retired and moved to California. He and his wife were not really settled in their new home near Los Gatos when he received a letter from Coronet Films asking if he would be interested in making a color film for them similar to his "Life Through a Microscope" but according to their spec-

(Continued on Page 379)



AN OSTRACOD, a crustacean common in pond water everywhere, photographed through a microscope by Clyde Prusman, is typical of subjects brought to the movie screen in his unusual 16mm. color film, "Life In A Drop Of Water."



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SCREEN BRILLIANCE—
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"EIGHT-71's" superb, completely *Lumenized* optical system, featuring the Kodak Ektanon 1-inch $f/1.6$ Projection Lens, teams with a powerful 750-watt standard lamp to provide abundant illumination for average use. But whenever you need it—for *big* 8mm. screenings in spacious rooms—*super-brilliance* is at your finger tips. Just touch an ejector to free the standard lamp... replace it with a 1000-watt accessory lamp... and Kodascope Eight-71 Projector provides unsurpassed 8mm. screen brilliance!

Other features, too—400-foot film capacity for 30 minutes of uninterrupted movies. Easy-action controls handily centered on a panel at the side of the machine. Motor rheostat that lets you adjust film flow. Cast-in handle for convenient carrying. Friction-free safety shut-

ter, moulded-rubber interior drive, and an easy-running, air-cooled motor for *quiet*, comfortable operation.

There's every assurance for long projector life... every safeguard for your film. Unique baffling in the condenser and aperture systems cuts out nonuseful light to eliminate excess heat at the film gate. An efficient fan and air-circulating system keep the whole machine cool even after hours of operation. And there's an air-operated safety shutter that cuts in automatically when film flow is adjusted below the safety point.

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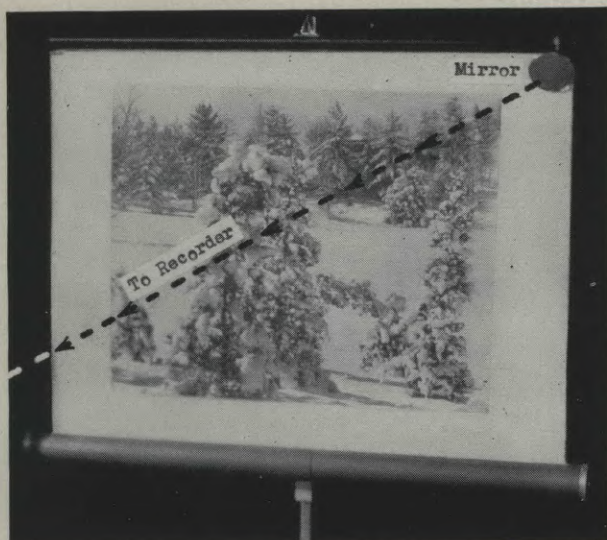
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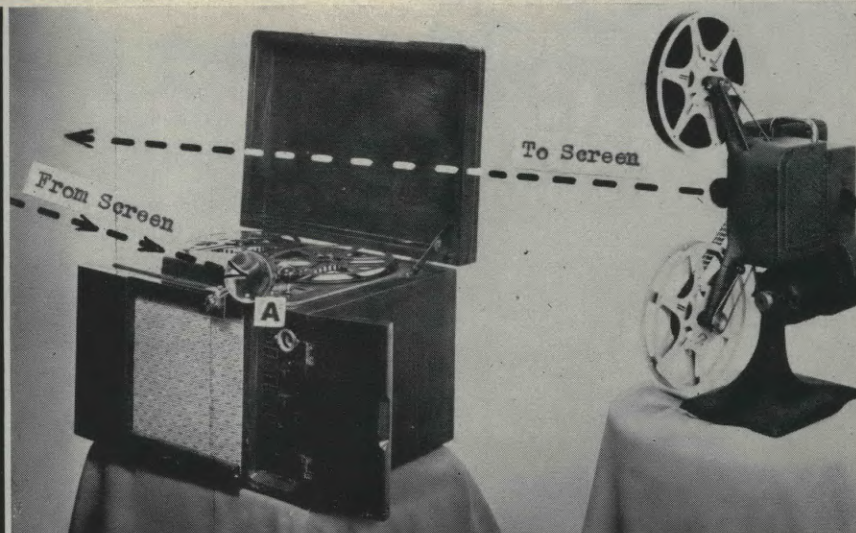


8mm and 16mm

ANIMAR LENSES



INTERMITTENT light for illuminating stroboscope side of the Tiger Tape is provided by reflection from the screen, either from the screen surface itself or by addition of small mirror which directs a beam of light to recorder.



TIGER TAPE'S strobo feature is effective when projector operates at 16 f.p.s. The imperceptible "blinks" of light from projector, between opening and closing of its shutter, are directed from the screen and condensed through the lens (A) onto the striped tape moving in the recorder. Syncing is effected by controlling projector.

AMATEURS in every field have both paved the path for the professional and borrowed methods from him, and home movie makers are no exception. The ensuing discussion does not presume the status of Hollywood technique but instead is intended as an economical and reliable approach to providing a method of sound accompaniment to your home or educational movies.

One can divide, according to the technical difficulties encountered, the problem of sound accompaniment into two groups: first, that of a running commentary or narration, as in the typical travelogue; and second, strict "word to lip" synchronization as, for example, in "close-ups" of persons talking, as in a play. Most amateurs will likely be content with the first classification. However, with diligence and with the proper

cueing, the scheme to be described can be satisfactorily controlled to meet the needs of "word to lip" synchronization.

Basically the method makes use of:

1. The currently popular tape recorder;
2. A magnetic recording tape (Tiger-Tape), the back side of which is printed with alternate dark and light blocks of

equal and specific spacing; and 3. A simple condensing lens.

Utilizing the three aforementioned items, the reflected light from the screen is condensed through the lens onto the striped tape moving in the recorder. If the tape velocity is such that at each

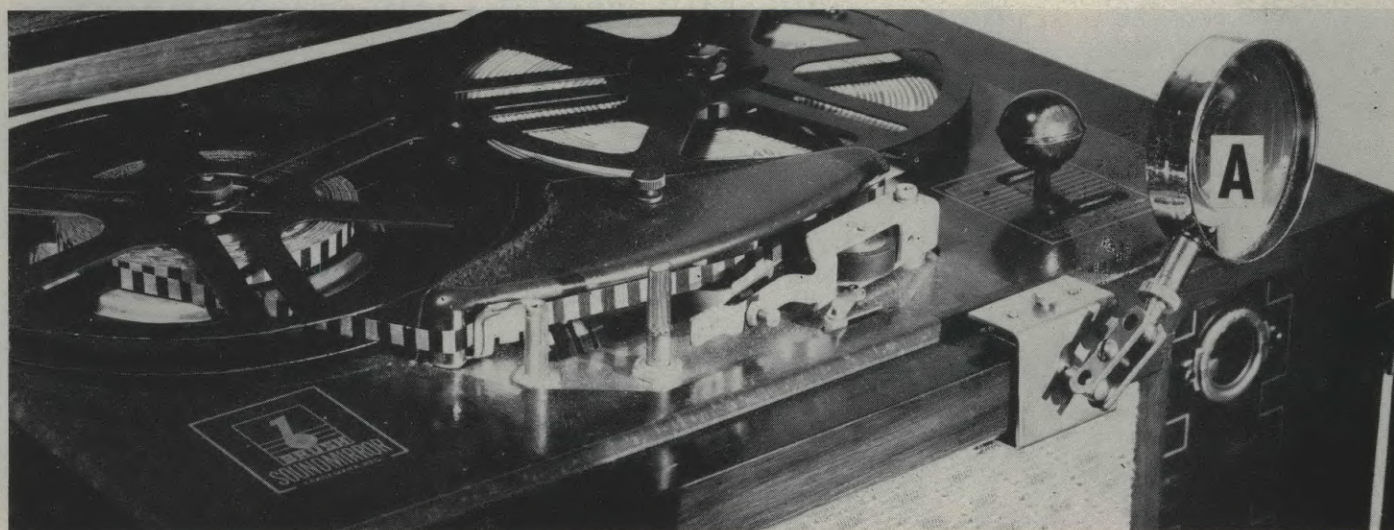
(Continued on Page 378)

Tiger Tape

Striped magnetic tape provides stroboscope synchronization of sound for home movies.

By PAUL E. KING

Brush Development Company



OPERATOR achieves synchronization of projector and recorder by watching area of tape illuminated by the concentrated beam of light falling on

it through the lens (A). When segments on tape appear to stand still, both machines are in sync, and projector speed is adjusted accordingly.

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THE RIGHT LIGHT FAST WITH

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Flick the switch to "dim" for composition, then flick it again to "bright" for full illumination on the subject. No more wasted time, tangled cords, or pictures that you "almost got."



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No matter how rapid the movement, POWELITE is *always* on the subject. A vital advantage in photographing children, pets and playtime activities. Powelite mounts on any tripod, is light for easy hand holding.



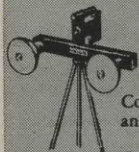
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NOT ALL ARTISTS PAINT!

(Continued from Page 365)

of rendering a standout stage performance, a brilliant canvas or a "best seller" novel—once they are struck by that lightning bolt we call "inspiration."

Inspiration comes pretty easy to many who own a movie camera. We see it in the simplest home movie of the family's "pride and joy" photographed, edited and titled with loving care, so that it appears on the screen an interesting pictorial narrative; or in interesting movie accounts of vacation outings; and—from among the more serious movie amateurs—complete photoplaylets with a luster approaching that of a Hollywood major production.

Today, most serious amateur movie efforts are to be seen on the screens of amateur movie clubs. Here the serious, imaginative filmer has opportunity to show his films before kindred hobbyists, where he benefits by their criticism and helpful advice.

Amateur movie makers who have not yet succeeded in "finding themselves," who have not yet been touched by the magic wand of inspiration, often ask: "Where can I get ideas for serious films?" or "I'd like to make a really serious picture, but I just can't get started."

Mostly it's a case of not being able to see the forest for the trees. Good ideas for amateur movies abound everywhere—in your own city or town, yes, even in your own back yard—even in your living room. Whether you live in California or Alabama, New York or Tacoma, you'll find inspiration for enter-

taining movies if you'll *look* for it. Of course, you must first understand the structure of a narrative or story-telling movie before you'll ever succeed in making one: it results in the knack of shooting a picture that has a logical beginning and an end, with cleverly interwoven continuity and a climactic highpoint.

To tell a story pictorially with your movie camera—to hold the interest of your audience—there must be an interesting and entertaining story to tell. Your film must clearly introduce the subject at the beginning, then describe it fully as it unfolds on the screen. And when the end title finally brings the picture to a close, it should leave in your audience's mind the satisfying feeling that it has been genuinely entertained.

Perhaps you are one who laments the fact you do not live in Hollywood where, as one amateur puts it, "so many interesting things are always happening," or you have never had opportunity to visit one of the scenically wonderous National Parks, such as Yellowstone or Yosemite—or, as one amateur disconsolately stated his plight: "Nothing ever happens here to shoot movies of!"

Do you live in or near Salt Lake City, for instance? Did you know there is a little-heard-of wild game preserve on a rock island in the midst of the Great Salt Lake just begging for some imaginative amateur to come with camera and Kodachrome and film one of the most interesting documentaries of bird life yet made?

Do you live within motoring distance

AMATEUR MOVIE CLUB MEMBERS! AMATEUR MOVIE CLUB SECRETARIES!

CLIP THIS coupon and give to the directors of your club with request that they fill it out and mail at once for entry blanks for American Cinematographer's 1950 Amateur Motion Picture Competition, announced elsewhere in this issue.

EDITOR,
American Cinematographer,
1782 NO. ORANGE DRIVE,
HOLLYWOOD 28, CALIF.

Gentlemen: Please send us our allotment of entry blanks and complete details for American Cinematographer's 1950 Amateur Motion Picture Competition. Same should be mailed to:

M.....
Title.....
Name of Club.....
Mailing Address.....
City.....Zone.....State.....

COMPETITION LIMITED TO CLUBS WITHIN THE CONTINENTAL UNITED STATES

The American Cinematographer
Invites All Amateur Movie Makers
To Participate In Its 1950
NATIONAL AMATEUR MOTION PICTURE
COMPETITION
for the
AMERICAN CINEMATOGRAPHER AWARD
AND SIX ACHIEVEMENT AWARDS FOR CINE PHOTOGRAPHY

Closing Date for Entries . . . MARCH 1, 1950

Winners will be Announced MARCH 15, 1950

Competition open to members of amateur movie clubs within the United States. Non-movie-club-members may also compete by submitting films to their local movie club for entry. (See rules.)

Judges will be leading directors of photography of Hollywood's motion picture studios. Names will be announced next month.

RULES

● Competition open to members of amateur movie clubs within the U.S. Clubs will evaluate and enter the best 8mm. and best 16mm. film completed by a member since January 1, 1948. Individuals (non-club-members) may also compete by submitting films to their local amateur movie club for entry at discretion of the club. (Refer to your local camera store for name and address of local club, or write the Editor.)

● Amateur movie clubs may enter films not to exceed 4, as follows:

Best 8 mm. member-made film.

Best 16mm. member-made film.

Best 8mm. non-member film.

Best 16mm. non-member film.

● Film length limits: 16mm.—800 feet. 8mm.—400 feet.

● Entry Fee: \$1.00 for each subject submitted.

● Each entry must be wholly amateur produced, except for

any titles and film laboratory work. Any sound accompaniment must be recorded exclusively by the entrant or club submitting the film.

● Each film reel as well as its container must be plainly and securely labeled with owner's name and address **plus** name and address of club entering the film.

● All films must be shipped on reels and in cans to contest headquarters fully prepaid. Entry blank and fee should be mailed in advance of film. Films will be returned directly to owner via Express collect, fully insured. **Be sure** to indicate value on your entry blank for which films are to be insured.

● Please indicate make and model of camera and the lenses used in making your picture, also brand of film used. This information will have no bearing on evaluation of films, but is desired by judges for reference.

● Do not submit any films before **January 1, 1950**. Send only your entry blank which may be obtained by writing The Editor, American Cinematographer, 1782 No. Orange Drive, Hollywood, Calif.

Club Secretaries: Write today for your club's allotment (4) of entry blanks, indicating your club's desire to participate.

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of southern plantation country? There you will find a most interesting activity to record—a novel hunting practice followed by natives there called “tapstick hunting.” In a tapstick hunt, a brigade of tenant farmers and their sons hunt wild rabbits in the tall brush in the fall of the year, using as a weapon a slender stick weighted at one end with a tap or heavy iron nut. Tossed at a fleeing rabbit, flushed out by the hunter’s dogs, one of the sticks invariably hits its mark, producing rabbit for the family’s dinner. Because of the interesting and unusual nature of this activity, plus the colorful country in which it is staged, with autumn colors painting the backdrops, it begs the attention of imaginative 8mm. or 16mm. cameraists to document it for screen entertainment.

Want to make colorful “postcard pictures that move?” Motor to Lee’s Ferry, on the Colorado River, and take your ciné camera aboard the air-driven flatboat “Tseh-Na-ni-ah-go Afin” that fights the great Colorado for 65 miles, finally bringing you to an unusual and colorful view of famed Rainbow Bridge. You’ll have color galore, breathtaking scenery—and if you’ve a flair for continuity, you’ll devise a thread of narrative to interweave with your shots—for a picture certain to take top prize in your local movie club contest.

Closer to home—if you’ll look sharply—you’ll invariably find such lens-beckoning activities as fly-casting and fishing contests; skating and skiing competitions in the winter; swimming and diving meets in the summer; and boy scout’s activities—all excellent movie fare anytime. Don’t think that because you live in a small town in some of the more isolated areas of America that “nothing happens here to shoot movies of!” An employee of a copper mining company living in Ajo, Arizona, has made several top-notch photoplaylets, using his 8mm. camera and Kodachrome and staging the action in the colorful highlands of Arizona, only a few hours drive away. His college-going son and associates comprised the cast of these films, most of which have received awards in national competitions.

Another amateur movie maker, owner of a small citrus grove in Southern California, found time between chores of spraying, tilling and pruning his citrus trees to make two prize-winning films of insects—one about a parasite that attacks orange and lemon trees, and the other depicting the life cycle of the silk worm. Filmed outdoors among the trees in his grove, this movie amateur was aided only by a set of extension tubes which he had made up especially for his Filmo 70-DA camera.

These are but a few of the thousands of serious picture making opportunities

that await the exploring amateur or have already been chronicled by some within continental U. S. The minutes of movie clubs the nation over have recorded hundreds of such instances of thoughtful movie making by men and women ciné enthusiasts in all walks of life, who have taken up ciné filming as a means of self-expression. American Cinematographer Magazine’s National Amateur Motion Picture Competition, announced last month, will bring to national attention many more, for this annual event is the one great opportunity for serious ciné amateurs to display their talents and their work before one of the most discerning albeit sympathetic panels of judges, men who know and appreciate good movie making—the professional cinematographers of Hollywood.

If you are a member of a ciné club, see that your club takes part in this important competition this year. Have your club secretary mail the request form on page 370, which will enable the editor to send your club its quota of entry blanks. If you have an important film completed since January 1, 1948, even though it has never been in competition or received an award, arrange to have it evaluated by your club for possible entry in American Cinematographer’s competition which closes March 1, 1950.

If you do not belong to a ciné club, you may still participate by submitting your film for appraisal to your local movie club. If it qualifies as “best” among films submitted by non-members, it may be submitted to the American Cinematographer as one of that club’s non-member entries. Only one 8mm. and one 16mm. non-member film may be submitted by any one club, along with a single 8mm. and a single 16mm. member-made film.

If you have not a film to enter, you still have time to make one. First look around for an idea, then go out and shoot it—thoughtfully, with continuity and good photography ever the dominant factors.

While most successful amateur movies are made with pre-planned shooting instructions as a guide, it isn’t entirely necessary to have an elaborately prepared scenario or shooting script. While scripts are vital to successful production of sound films in Hollywood today, I can remember when they weren’t considered so in the days of silent pictures. For instance, Douglas Fairbanks, Sr., whose cameraman I was for many years, produced some of his most successful pictures with nothing more than a few “cuff notes” and hastily drawn sketches as a guide. Doug improvised and made up much of the action as he went along. Many imaginative movie amateurs can do the same and come up with successful pictures, too. **END.**

BULLETIN BOARD

(Continued from Page 356)

the special stage presentation preceding the world premiere showing of the picture there.

•
FLOYD CROSBY, A.S.C., is photographing a new series of short subjects for television being produced by Rudolph Polk and directed by Irving Reis, who directed "Roseanna McCoy" for Goldwyn.

•
WHEN VIC MILNER, JR., took his cameraman dad for an auto tour of Germany recently and inadvertently crossed into verboten Russian territory, resulting in their being taken into custody, he unwittingly created publicity for Victor Milner, Sr., A.S.C., that could not be equalled had Victor, Sr., won an Academy Award. Their Russian capture and subsequent release a few days later was front page news on the nation's dailies for three days!

•
LLOYD AHERN, A.S.C., has had his contract renewed for another year at 20th Century-Fox. He recently completed "Turned Up Toes" there.

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S. M. P. E. CONVENTION PROGRAM

(Continued from Page 354)

V—Sound Tracks for Type 275.

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VI—Demonstration.

A. B. JENNINGS, *E. I. du Pont de Nemours & Company*

WEDNESDAY MORNING • OCTOBER 12

9:30 **REGISTRATION**—Mezzanine Floor
Advance sale of Banquet tickets.

10:00 **TECHNICAL SESSION**—High Speed Photography Symposium, Aviation Room

Session will open with a picture by DR. MYRON PRINZMETAL on high speed motion pictures of the heart.

A Physical Optic Analysis of Image Quality in Schlieren Photography

H. JEROME SHAFFER, *Princeton University*

Schlieren Photographic Processes

NORMAN BARNES, *General Electric Co.*

Recording Cameras

JAMES BEATTY, *Hollywood, California*

Kerr-Cell Techniques in Ultra-High Speed Photography

A. M. ZAREM, *Stanford Research Institute*

Ultra-High-Speed Oscillography

C. BERKLEY AND H. P. MANSBERG,
Allen B. DuMont Laboratories

WEDNESDAY AFTERNOON

2:00 **TECHNICAL SESSION**—High Speed Photography Symposium (cont'd.), Aviation Room

High Speed and Time Lapse Photography

HENRY LESTER, *New York*

High Speed Photography Committee Report

New View Finder for Fastax Camera

ALFRED LIDFELDT, *Wollensak Optical Co., Rochester*

Report on Industrial Survey Made by High Speed Committee

KENNETH SHAFTON, *S. W. Research Institute, San Antonio, Texas*

A New Camera for Photographing Human Cavities

ARTHUR NEYHART, *Los Angeles*

Medical Photography With the Intraflex Camera

DR. B. M. CULLEY, *Los Angeles*

Measuring Shock With High-Speed Motion Pictures

J. T. MULLER, *Bell Telephone Laboratories, Inc.*

Improvements in High-Speed Motion Pictures by Multiple-Aperture Focal-Plane Scanners

FORDYCE E. TUTTLE, *Eastman Kodak Company*

DISCUSSION PERIOD.

WEDNESDAY EVENING

7:15 **COCKTAIL HOUR**, Redwood Room

8:30 **66th SEMI-ANNUAL BANQUET**, Blossom Room

EARL I. SPONABLE, *Presiding*

THURSDAY MORNING • OCTOBER 13

2:00 **TECHNICAL SESSION**—High Speed Photography Symposium (cont'd.), Aviation Room

High Speed Motion Picture Photography, Navy Department

Symposium (Cont'd.), Aviation Room

Motion Pictures in the Guided Missile Programs
HENRY M. COBB, *Ballistic Research Laboratories, Aberdeen Proving Ground, Md.*

The Bowen Acceleration Camera

E. E. GREEN AND T. J. OBST, *U.S. Naval Ordnance Test Station*

Report of Lighting Sub-Committee

DISCUSSION PERIOD.

THURSDAY AFTERNOON

Joint session with Society of Television Engineers.

1:30 FIELD TRIP to Mount Wilson. See Note.

Inspection of Television Transmitters and 100 inch telescope. Hosts for this trip will be members of the Society of Television Engineers and DR. IRA S. BOWEN, Director of Mt. Wilson and Palomar Observatories, and staff.

5:00 **Dinner at Mount Wilson Hotel. See Note.**

7:30 TECHNICAL SESSION

Television, Carnegie Assembly Hall, Mt. Wilson Observatory.

The Uniqueness of Television in the Los Angeles Area

FREDERICK C. WOLCOTT, *Gilfillan Brothers, Inc.*

8:00 **Recent Developments in a Television Pickup Camera**

VLADIMIR ZWORYKIN, *Guest Speaker*

NOTE: If transportation for this trip is required, it will be necessary to so notify the transportation committee. Further, the local arrangements committee must be informed by those members who intend to have dinner at the Mount Wilson Hotel.

FRIDAY MORNING • OCTOBER 14

10:00 **TECHNICAL SESSION**—Television, Blossom Room

Session will open with a motion picture film on video recording.

10:15 **Theatre Television Committee Report**
Perception of Television Random Noise

PIERRE MERTZ, *Bell Telephone Laboratories*

The perception of random noise in television has been clarified by studying its analogy to graininess in photography.

Theatre Television Transmission and Projection System by the Eidophor Method

E. LABIN, *Federal Telecommunication Laboratories*

A Rooter for Video Signals

B. M. OLIVER, *Bell Telephone Laboratories, Inc.*

This paper describes a device which takes the n-th root of the instantaneous amplitude of a video signal. Its intended use is to improve the picture quality in a television system using linear camera tubes and conventional cathode ray viewing tubes.

A new F/1.5 Lens for Professional 16mm. Projectors

W. E. SCHADE, *Eastman Kodak Co.*

To meet the growing demand for improved high-aperture 16mm. projection lenses, the Eastman Kodak Company has announced a new series of f/1.5 lenses primarily intended for professional projectors.

Noise Considerations in Sound Recording Transmission Systems

F. L. HOPPER, *Western Electric Co.*

Noise limitations of sound recording media are well known. With improved media such as magnetic materials, noise limitations imposed by the recording transmission system require consideration.

FRIDAY AFTERNOON

2:00 **TECHNICAL SESSION**—Sound Recording, Academy Award Theatre

SMPE Television Test Film.

2:10 **Magnetic Recording Committee Report**
Film Dimensions Committee Report

Sprocketless Synchronous Magnetic Tape

RICHARD H. RANGER, *Rangertone, Inc.*

Supplementary Magnetic Facilities for Photographic Sound Systems

G. R. CRANE, J. G. FRAYNE, E. W. TEMPLIN, *Western Electric Co.*

To facilitate the introduction of magnetic recording on 35mm. film, modifications have been engineered for adapting photographic recording and reproducing systems so that

they may be used alternatively for either photographic or magnetic recording.

The Altec Miniature Condenser Microphone

JOHN K. HILLIARD, *Altec Lansing Corporation*

This paper describes operation and use of a miniature condenser microphone 0.6 inches in diameter.

Increased Noise Reduction in Sound Film Recording Through the Use of Delay Networks

J. R. WHITNEY AND J. W. THATCHER, *Sound Services, Inc.*

This paper describes a new method of obtaining increased signal to noise ratio in optical sound film recording.

Improved Volume Range With Variable Density Recording

RALPH A. DUPY, *Metro-Goldwyn-Mayer Studios*

A new variable density release system to produce the same level as variable area provides the basis for a large reduction in distortion and noise.

Simplification of Motion Picture Processing Methods

C. E. IVES AND C. J. KUNZ, *Kodak Research Laboratories*

The chemical bath formulas and treating methods used in present day continuous motion picture processing machines were adopted without essential modification from the earlier manually operated rack and tank process.

The design of equipment to suit the needs of these processing methods is described with reference to the conditions which are met in television work, in the motion picture laboratory and in the eld.

FRIDAY EVENING

8:00 TECHNICAL SESSION — Motion Picture Production, Blossom Room

Session will open with a motion picture short.

8:10 A Reflex 35mm. Magazine Motion Picture Camera

BENJAMIN BERG, *Etalissements Cinematographiques Eclair*

Illuminating Large Drive-In Theatre Screens

C. N. BATSEL AND H. J. BENHAM, *RCA Victor Division*

Some of the limitations and handicaps in connection with illuminating large drive-in theatre screens are discussed.

New 13.6mm. Hitex Super High Intensity Carbon

R. M. BUSHONG AND W. W. LOZIER, *National Carbon Company*

A new carbon, called the "Hitex" Super has been developed to give more light on the projection screen from condenser-type lamps used in many outdoor and large indoor theatres.

A Study of the Influence of Rate of Recirculation on Processing Solution Compositions

JOHN G. STOTT, *Du-Art Film Laboratories, Inc.*

A brief theoretical study is made of the effect of rate of recirculation on developer and fixing bath compositions in continuously replenished and recirculated film processing systems.

Designing Engine-Generator Equipment for Motion Picture Locations

M. A. HANKINS AND PETER MOLE, *Mole-Richardson Company*

Sensitometric Investigations of Background Process Photography

HERBERT MEYER, *Motion Picture Research Council, Inc.*

The composite negative obtained by photographing action against a rear projected background plate is a combination of an original negative with a dupe negative. An analysis by sensitometric methods of the gradational distortions thereby introduced has been attempted, the results of which are discussed in this paper.

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F2.3 Astro Pan Tachar bbl.....	39.50
F2 Cooke Kinic for Mitchell mount.....	75.00
F2.9 Ilex Seminat bbl.....	25.00
3-3/4" F3.3 Cooke Telekinic Eymo C mount.....	85.00

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F2.3 Baltar B&L for Eymo C mount.....	125.00
F2.3 Astro Contrast Tachar in Mitchell mount.....	105.00
F4 Dallmeyer Telephoto for Mitchell mount.....	110.00
F2.5 Cooke Kinic bbl.....	55.00
F3 Meyer Trioplan bbl.....	35.00
F2.9 Ilex Seminat bbl.....	35.00

6" AND LARGER LENSES

6" F4.5 Cooke Telekinic for Eymo C Mount.....	110.00
6" F3.5 Dallmeyer Cinematograph Akeley standard mount.....	80.00
6" F3.5 Ilex Seminat for Mitchell mount.....	65.00
6 1/2" F4.5 Zeiss Tessar C mount.....	75.00
21cm F3.5 Zeiss Tessar in Mitchell mount.....	110.00
8" F2.9 Ross bbl.....	45.00
9" F6.3 Ross Telephoto, bbl Eymo C mount.....	135.00
9" F6.3 Ilex Paragon focusing mount.....	95.00
12" F6.5 Dallon Telephoto in Mitchell mount.....	90.00
12 1/2" F6.5 Taylor Hobson Cooke F5.6 Eymo C mount.....	110.00
16" F7 Cooke Telar bbl.....	55.00

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SYNCHRONOUS MOTOR with tachometer, variable speeds. Can be adapted to Cine Special or almost any camera. Used..... 75.00

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Exploded View — Showing Typical Delta Custom FOCUSING MOUNT

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3 for \$12.95 — 6 for \$24.00 — 12 for \$45.00

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16MM. x 50' Infra-red film on cores for magazine loading, ea..... 59c

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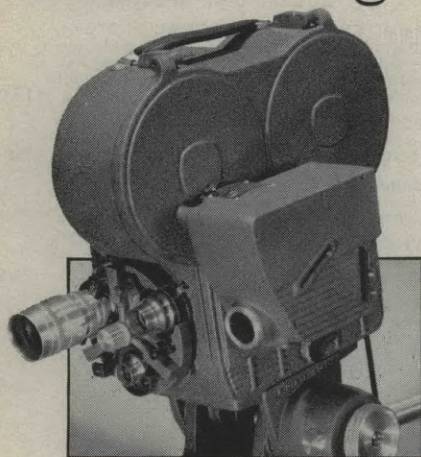
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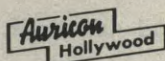


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Major Hollywood Studios and Television Stations are enthusiastically using this new "NR-24" Auricon Equipment after extensive tests! Write us today for your free copy of the Auricon 16 mm sound-on-film Equipment Catalog. If you already own Auricon Equipment, write us regarding conversion of your equipment to the new "NR-24" Amplifier circuit for improved results.



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RECORDING EQUIPMENT SINCE 1931

THEY DO IT WITH INFRA-RED!

(Continued from Page 360)

played in the low key lighting of night time seemed to have terrific appeal on the screen.

What followed is that Universal has turned out five films—one after another, almost—during the past eight months, in which night scenes played before cameras loaded with I-R film constituted the crux of the action. These five films are: "Take One False Step," filmed by Frank Planer, A.S.C., "Illegal Entry," filmed by William Daniels, A.S.C., "Sword In The Desert," filmed by Irving Glassberg, A.S.C., "Johnny Stool Pigeon," with Maury Gertzman, A.S.C., behind the camera, and "Abandoned," also photographed by Daniels. On all these pictures, Stanley Horsley, A.S.C., Universal's director of special and process photography, also contributed camera work in which infra-red film was used. Today, Universal-International is probably the only motion picture studio using I-R film on such large scale.

The most extensive use of infra-red film ever noted in a motion picture was employed in the making of "Illegal Entry" and the most significant steps ever taken in development of infra-red were recorded. Weeks of tests preceded shooting of the picture by Daniels and resulted in night sequences being filmed at four large Southern California air fields in broad daylight.

Bud Westmore, director of make-up for Universal, perfected a new infra-red make-up for "Illegal Entry" after more than a year of experimentation. The new make-up need not be changed for photographing players on normal film after they have been shot on I-R film, hence an added savings of time and money is achieved. Methods were found by Westmore to cover up "five o'clock shadow" on faces of the actors. He covered actor's beard's with a coating of rouge and then applied regular brown infra-red makeup. Rouge, on infra-red film, turns the beard white, and the brown make-up then brings out the desired skin coloring.

"Sword In The Desert" is unique in that four-fifths of its footage consists of night scenes. This fact resulted in experimentation never before recorded in the handling of infra-red film in achieving night effects, by director of photography Irving Glassberg. Before he started shooting the picture, Glassberg spent a whole day at the beach with his camera photographing some of the cast in costume. Here he made many important discoveries in the use of I-R film. One was that many colors that appear normal and consistent to the eye, appear differently to the discerning and unusually sensitive

emulsion of infra-red film. Of camera tests on seven blue serge uniforms, five photographed gray, two white and one black!

"Sword In The Desert" is the story of homeless Jewish refugees attempting to find refuge in Palestine. Dramatic action in the opening sequence takes place at dusk and, later, at dawn, and this called for a special kind of night effect—one that demanded a special kind of daylight for infra-red film, which Glassberg and the company fortunately encountered on the invariably fog-bound locale at Monterey, California. Where clear blue skies and bright sunlight are normally required for producing the illusion of true night scenes with I-R film, scenes ostensibly staged at dusk require that the sky be murky or grey, Glassberg said. Oddly enough, I-R film is compatible with this kind of daylight in producing a very realistic dawn or dusk effect, where shadows are entirely absent.

According to Glassberg, the limited latitude of infra-red is comparable to that of Kodachrome; in fact, he says, he shot infra-red the same as he does Kodachrome—at approximately f/8 on overcast days with no sun.

Closeups of faces are something that just can't be filmed satisfactory with infra-red, said Glassberg. The results are "too mushy," he says. So whenever he had closeups to make, he used plus-X film and a series of filters which enabled him to obtain results matching the infra-red film perfectly. The filters, he says, "mush out" the details which otherwise would be rendered sharp and contrasty. His formula for this is to use a 23-A and an x-1 filter in combination in back of the lens for correction, and a Scheibe 512 and a Mitchell B in combination in front of the lens to soften and diffuse the image.

"For moonlight effects with infra-red, I prefer to use a backlight on players in closeups," Glassberg said. "On dull days I used a front key light of 400 foot candles to get contrast in the faces, plus a liner." Because infra-red is essentially a medium for realistic effects, Glassberg avoids what he terms "phony" or "arty" lighting when shooting with this film.

Maury Gertzman is another U-I cinematographer who has acquitted himself admirably in the use of infra-red in the photography of Universal-International's "Johnny Stool Pigeon," currently on the screens of the nation's theatres. Many of the night scenes for this picture were filmed at Nogales, Arizona—on the Mexican border. "We obtained night

effects here," said Gertzman, "that we could not possibly have gotten were we to shoot at night with lights. Besides the cost of transporting to the location and using the necessary number of lights would have been prohibitive."

"Here we tried for the first time a new innovation that is sure to play a big part in all future productions in which infra-red film is used. It is a new material called Scotch Light, which is similar in appearance to the fabric of beaded movie screens. We used panels of this material in the windows of buildings in shooting exteriors. By directing sunlight on these panels with reflectors or by throwing light on them with incandescent lamps, we got a striking effect of lighted windows without the need of actually placing lighting units inside the buildings. Where a window was lacking, and we felt that one would enhance the composition, we simply tacked a panel of scotch light on the side of a home or building and gave it the effect of a real window, when seen from a distance, by putting in "cross-bars" with strips of black tape.

Like Glassberg, Gertzman made exhaustive tests with I-R film before starting his new assignment. "I tried everything in the book, finally found that a 29-F filter produced the most even and consistent results with the film," said Gertzman.

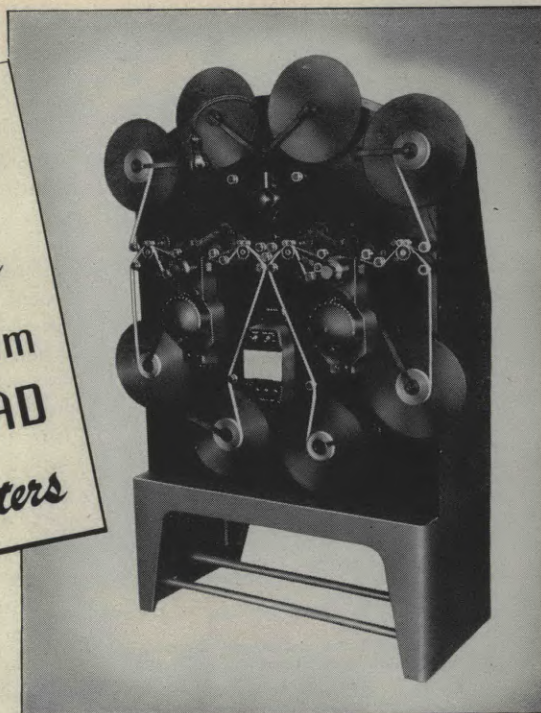
He also pointed out that the studio provided him with specially calibrated lenses for shooting I-R film. Thus, he could use any type of meter to read the prevailing light intensity, and set the lens at the f/stop he would ordinarily use if he were shooting with regular plus X. The lenses are compensated for the 29-F filters used before them when shooting with infra-red, thus freeing the cameraman of any mathematical problems that he might otherwise encounter were the lenses not so calibrated.

The same lenses were also re-calibrated for focus. "Infra-red rays, because of their longer wave length, do not focus in the same plane as visible light rays in the case of many lenses," Gertzman explained. "It is therefore necessary to make adjustment to correct for focusing difference between infra-red and visible light rays."

"Consistency of results," said Gertzman, "is the dominant aim, when using infra-red film. There is no established emulsion speed for infra-red, therefore a cameraman cannot determine his exposure in the same way he would when using plus-X, simply by taking an exposure meter reading. Instead he must make hand tests each day in order to determine what stop he is to use. Unless condition of the light changes appreciably during the day — that is, if the sky doesn't be-

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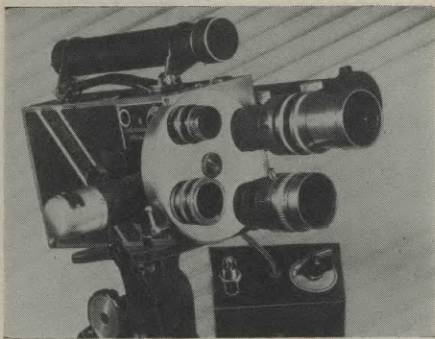
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come overcast or "smog" envelope the locale, the exposure established earlier that day by hand test usually may be relied upon for the rest of the day.

"I think best results follow where the cameraman does no experimenting on location, but gets all this done before starting out, then sticks rigidly to formula."

Probably the greatest painting job in recent film history was done for "Johnny Stool Pigeon" at the big Muroc air base, when it was found that the surface of the airport runways, bearing a reddish hue, went dead white on the infra-red film for night effects. The problem was solved by spraying the entire field, an area of more than 12,000,000 square feet. The job was done in less than three hours by nine spraying machines working at top speed.

Many of the background and process plates for these pictures were photographed on infra-red by Stanley Horsley, who also handled second camera units on some of the productions. He emphasized how important it is in shooting night effects with infra-red, to have all lights in a scene "punch through" the daylight. "Ordinary light globes appear quite 'anemic' when lit out-of-doors in bright sunlight," Horsley pointed out, "and for this reason regular light globes in outdoor signs, street lamps, etc., in all these pictures, were replaced with photofloods. Automobile headlight lamps were replaced with special high-intensity bulbs, which previously had been developed especially for aircraft landings."

Horsley, too, encountered surprising results when photographing certain colors in costumes. Like Glassberg, he had to shoot tests of players' costumes with infra-red to determine which reproduced in the desired tones. In discussing this peculiar phenomenon of colors "going sour" when photographed with infra-red, Horsley holds with many other cameramen that all colors reflect the next lower octave of color, thus gumming up things photographically when I-R film is used.

"Bulk of the credit for successful use of infra-red at Universal-International goes to studio production manager, Jim Pratt," said Horsley, "for it was he who had the courage to try it and to give our directors of photography confidence in undertaking wide, general use of this comparatively new film stock."

It's been interesting as well as educational for Universal-International's directors of photography to explore, improvise, and establish "norms" in the use of infra-red film. It's been profitable for Universal-International, too, because through the successful use of infra-red, they have discovered not only how to pare costs considerably on scripts calling for night scenes, but, additionally, how to give productions greater impact by playing the action in the eerie or mysterious cloak of darkness, instead of re-writing night shots or eliminating them from scripts entirely as an economy measure. That all of U-I's cinematographers have contributed much toward eliminating the "mystery" from infra-red photography is now pretty well established.

TIGER TAPE

(Continued from Page 369)

projector shutter "blink," a light patch is revealed in a given position, then the tape will appear motionless (stroboscopic effect). This is the principle upon which the arrangement operates. Mathematically, with a tape speed of $7\frac{1}{2}$ " per second, the proper spacing for one dark and one light patch of the striped tape is .468" at a shutter rate of 16 frames per second.

A word in regard to controlling synchronization. Since most tape recorders are supplied with a motor not easily adapted to speed control and since most of the silent projectors do have such a control, the slight burden of synchronization may be left to the projector, which in practice works out quite well. The projector speed is so adjusted that the pattern on the tape remains stationary throughout the narration. This is all that is necessary at this time, for we have accomplished in this step most of our

work—we have recorded the desired sound in exact step with our film.

In playing back, an additional step is necessary, namely, that of starting both tape and film together. This may be done by cueing the film with a bit of lacquer at the sprocket hole area and the tape with a piece of colored Scotch tape. With the aid of a pair of electrical outlets supplied by one switch, both the projector and tape recorder may be started within very close synchronism of each other. If sufficient "leader" is allowed on both units, exact synchronism may be obtained within seconds of starting. The film leader is run through until the cueing mark is within a short distance of the film gate and the recording tape cue is likewise placed a short distance from the playback heads.

The method as a whole provides for a minimum of additional expense and equipment and by such token should prove popular in amateur installations.

BETTER MOUSETRAP WAS HOMEMADE MOVIE

(Continued from Page 366)

ifications. They would provide a shooting script.

Mr. Prusman made this biological picture, and it sold so well that Coronet Films ordered a second educational film. This second picture has been completed and has also been well received, and the film company and Prusman are now corresponding about a third picture. The world did indeed come to his door, and if he had tried to lure people along the path, he could feel gratified at his success. But perhaps the outcome is even more flattering because it was unexpected and unsought. He had had no intention of selling his films.

Such a brief summary makes his achievement sound deceptively easy, and for those interested in similar projects, it is well to fill in the picture. Speaking of some of his difficulties he said, "Ever since I started making biological pictures, I have been thankful that in Chicago I had a friend who was a biology teacher. For some reason I escaped formal classroom training in biology in both high school and college. This teacher showed me how to prepare slides, and made suggestions and criticisms. Sometimes he provided specimens which he wished to have photographed. I feel that I owe a good deal to him, particularly when I started making a film for someone else, and not just for my own entertainment."

In making the picture for Coronet Films he had several problems to solve. He had never worked with Kodachrome or a script, and his new home had no dark room. The last difficulty he remedied at once by building one himself. He bought a used 16mm. Victor camera, and a supply of Kodachrome film. He had a Carl Zeiss microscope and a reflex viewer. He had everything but the animalcules, and these he did not know where to find.

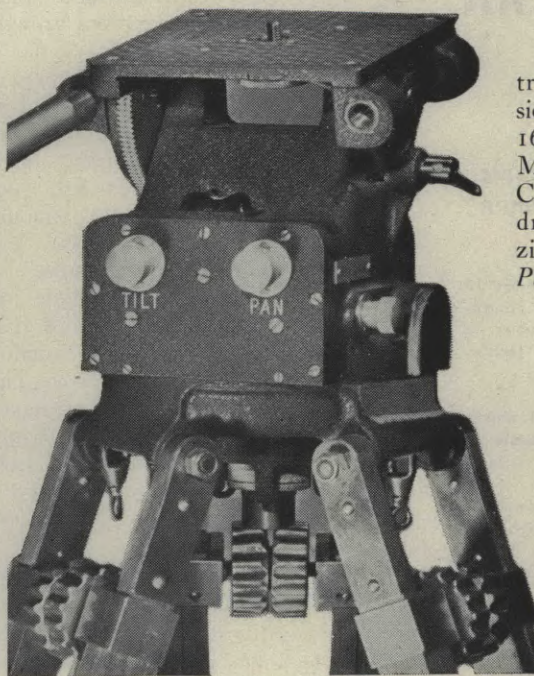
In Chicago he and his wife had been accustomed to make field trips to Jackson Park Lagoon on Saturdays and Sundays. "I knew the Lagoon well," he said. "I had my favorite pools, and knew just where to dip up a lively supply of specimens. But for my own entertainment, I was satisfied with whichever animalcules the trip of the day provided, or with the specimens which my friend the biology teacher brought me."

"But Coronet Films had specified certain animalcules by name, among them some that I had never seen and that proved difficult to identify. The Arcella, a shell-bearing member of the Amoeba family, is an example.

"Moreover, I was a stranger in a

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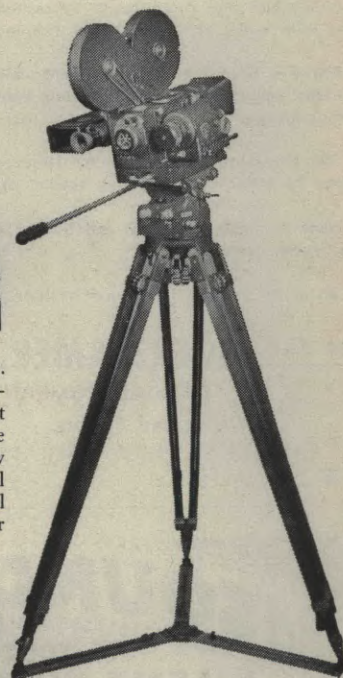


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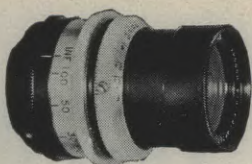
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strange land, and did not know where to look for suitable pools. Even a native might have been at a loss at the time, because the rainy season had not yet started, and many of the streams and pools of California come and go with the rains. The famous Arroyo Seco of Pasadena is not the only dry stream in the state."

People familiar with California know that most of her cities have been made possible because water has been brought from afar for their reservoirs. Since it seldom freezes in the coastal regions of the state, it is possible to keep goldfish in outdoor ponds the year round. When someone remarked that probably many neighbors of the Prusmans had such pools which would provide any amount of slime teeming with life, he said, "Yes, but I didn't know these neighbors."

It was as simple as that to Clyde. He hadn't been introduced, and accustomed for many years to the cold impersonality of a great city, it did not occur to him to ring the doorbells of total strangers and ask if he might dip a bottle of water from their fishpond. "Anyway, I wanted to see the country," he said. "I had a car and plenty of leisure, so I just cruised about looking for pools."

He had traveled between 500 and 1000 miles before finding all of his specimens. In addition to the Arcella, the Hydra, which has green and brown individuals, and the Stentor, which may be either blue or brown, proved elusive.

"I had seen and photographed the brown Stentor in Chicago," he said, "But Coronet Films wanted the blue Stentor as well. I had made countless preparations and was about ready to give up when at last I saw a blue Stentor move in the edge of the field in one slide. It was in the slime from some decayed leaves which I had dipped from some pools near Skyline Boulevard just south of San Francisco. I found the Volvox there, too."

When he had secured his specimens, he had still to solve the problems presented by their lack of cooperation in his project. They were not interested in being movie stars. "I worked by the trial and error method," he said. "It is possible to slow down the animalcules with some viscous substance, such as white of egg, and it is possible to use an anesthetic, such as chloretone. I resorted to anesthesia seldom, because it is too difficult to make the nice adjustment in solution necessary to impede the movement without stopping it forever. Keeping the preparation cold is perhaps the best method."

"The script provided continuity, and to add to the effect, I placed strands of algae as background for each subject so that the algae seemed to proceed con-

tinuously through the film. The films were sent in as finished, the last one in August of 1946. The completed picture was 400 feet long, and it runs about twelve to fifteen minutes. Coronet Films gave it the title 'Life in a Drop of Water'."

The second picture which he made for Coronet Films was entitled "The Cell—The Structural Unit of Life." "In this picture I used not only unicellular, but multicellular structures," he said, "the latter in the form of two high school boys, who complicated my problem considerably."

The opening shots showed the boys strolling along a creek, finding specimens. The remaining shots of the boys were taken in the Prusman living room, which was rigged up to look as much as possible like a schoolboy's laboratory. The older boy demonstrated to the younger the technique of preparing slides, adjusting the microscope, etc. "The Cell" has proved a popular picture.

Just as a hobby Mr. Prusman has made a number of other pictures, with the advice of his friend the biology teacher. These films compare the circulation of blood in the web of a frog's foot with the streaming of chlorophyll in leaf cells. For the picture of chlorophyll he used Elodea, which has leaves so thin they require no dissection. He has also photographed the development of the embryo of a chick, and the life cycle of the mosquito, and of the frog.

He belongs to five international portfolios for exchange of photographs and comments on work: American, Australian, Canadian, English, and Indian. He said modestly he does not feel that he has a great deal of talent as a pictorial photographer, and is glad that his main interest lies in scientific pictures.

Asked whether he intended to go into the movie business on a larger scale, Mr. Prusman said his answer was definitely no. He has no intention of making pictures in which he would use human actors, for instance, to any extent.

"Granted that animalcules present problems of behavior that are challenging, nevertheless a man doubling as photographer and director can control the situation. With human actors he must needs be more circumspect. Much as he might wish to, he could not anesthetize them!"

"No," he said, with a twinkle in his keen eyes, "I have no intention of invading Hollywood. I'll stick to my sunny hillside and my own dark room. Movies are just a hobby with me, and I don't intend to take myself too seriously."

"I'll never hear myself referred to as a Movie Mogul, because I'm strictly a home movie man."

MAGIC OF MONTAGE

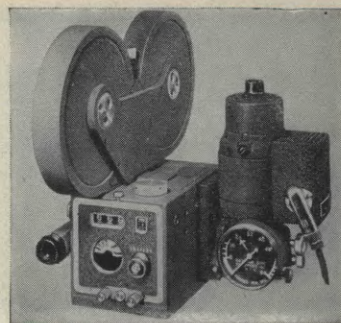
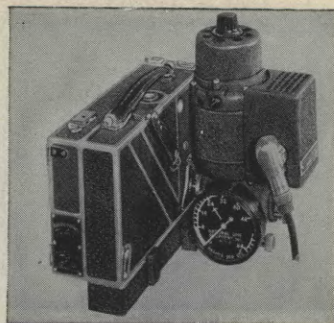
(Continued from Page 361)

ing schedule of a prize fighter. In this case, the entire montage was plotted in a definite rhythmic pattern into which the separate actions fit almost as if paced by a metronome. Such actions as the punching of a bag, the skipping of a rope, footwork, and calisthenics were precisely edited into a pattern to form what amounted to a filmic ballet.

The impression was heightened by the accompaniment of a precisely matched musical score. Over it all, the natural descriptive narration of one of the principal characters managed to keep the device from slipping into pure fantasy. The dominant impression left by this particular montage was one of clock-work routine, split-hair timing, and machine-like human precision. Thus, in one forceful but short length of film, the robot routine of a prize-fighter's training schedule was dramatically portrayed.

The mechanics of montage are basically simple and clear-cut. There are three main styles: the *cut* montage, the *dissolve* montage, and the *superimposed* montage. The cut montage, as the term implies, is a series of short scenes cut together in a staccato pattern. These scenes may not be related in actual content, but their skilful cutting, one next to the other, results in an inter-relation which conveys itself to the audience-mind. The dissolve montage is a series of short scenes which flow one into the other by means of dissolved transitions. It is less staccato than the cut montage, and depends for its effect upon fluid movement from one idea to the next. One scene is still partially visible as another scene is taking form, and a subtle inter-relationship of succeeding scenes is thus created. The superimposed montage, as the term indicates, is composed of two or more separate images printed or exposed one upon the other, so that they combine to form a single impression. For example, the basic image might be a close-up of a frightened feminine face. Superimposed over this scene, would be shots of exploding cannon, surging tanks, and great masses of soldiers in action. The impression conveyed is that of a woman not merely frightened by war, but actually caught up in the maelstrom of the conflict itself.

The creation of a montage is a highly specialized process. A great deal more is involved than the mere cutting or dissolving of one scene into the other. Montage experts in the studios work out a visual pattern in terms of the impression to be conveyed, and proceed in the editing process to precisely assemble the various separate scenes which have been



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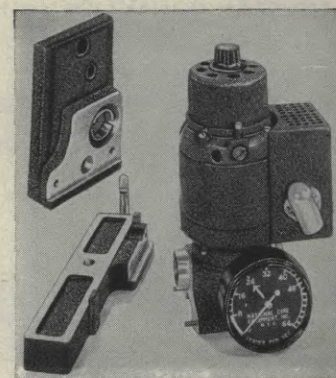
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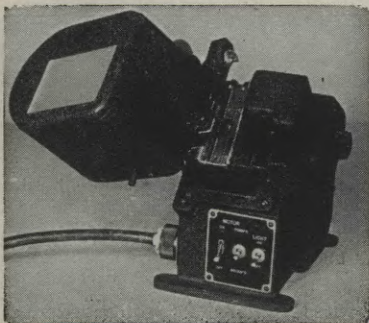
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photographed according to the preconceived plan. These scenes are edited down to the precise frame, so that the pace, tempo, and rhythm of the sequence, are consistent with the original idea.

The art of the Montage has long been a mainstay of European film production. In many foreign films it has been used with forceful effect. Inevitably, however, it has also been abused in some instances through the use of such obscure symbolism that the resulting impression was a

meaningless hodge-podge. In America, the art of creative montage has not yet been fully developed. The tendency is to fall into formulas of *cliché* which achieve transitional purposes with little originality. Correctly used, montage approaches pure cinema—which, after all, is nothing more than the art of visually advancing a dramatic story without calling attention to the mechanical effects involved.

UNDER CAPRICORN

(Continued from Page 359)

dozens of dimmer shutters, etc., to a split-second cue!

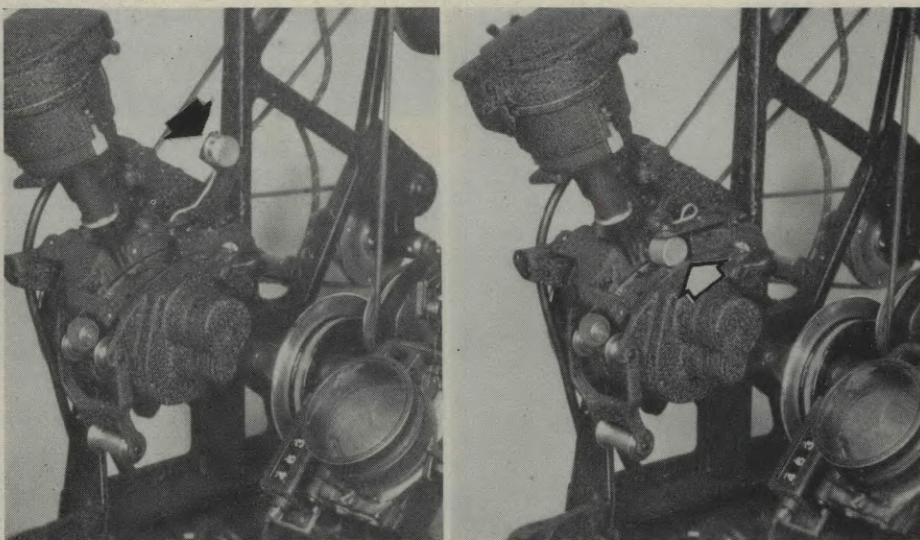
I must say that I owe a tremendous amount to American equipment. I just don't know what I would have done without American Mazda photospots and photofloods, etc.

Well, it's over. The film was completed by this method in twelve weeks instead of twenty-five by usual standards. I could have minimized my difficulties by flat newsreel lighting, but I doubt if any cameraman in the world would have accepted such a compromise, and whatever the results I can only say I tried to obtain the same quality of lighting in spite of the horrifying difficulties. On most occasions, instead of saying: "I want a lamp *here*," I had to ask what

possible room was left to put a lamp, and how long it could stay there before the camera, or a wall, engulfed it!

Hitch was always ready to change the action if things got really tough, but like anyone else, I was always loathe to admit defeat. I am not going to weigh the pros and cons of this method of film making. Those against this technique will jubilantly point to the necessity of cutting some of our long reels for story adjustments. I was, of course, chagrined to see the blood, tears and sweat of a reel's work cut, but it would be invidious to air my views on such a platform subject. I shall only say that it was a technical nightmare I wouldn't have missed for worlds!

Magnetic Sound Conversion For Moviolas



TWO VIEWS showing standard 35mm. Moviola modified for magnetic film sound tracks. Addition of magnetic pickup plus alteration of amplifier enables Moviolas to reproduce magnetic as well as optical sound tracks on 35mm. film. Pickup head is shown in "open" position in photo at left, and in "closed" position ready for use at right.

KEEPING pace with the growing use of magnetic film recording in the production of motion pictures, Moviola Manufacturing Company, 1451 Gordon Street,

Hollywood, now offers a conversion for standard 35mm. Moviolas permitting them to reproduce magnetic as well as optical sound tracks. The conversion,

which is done at the Moviola factory in Hollywood, consists of adding a magnetic pickup head to the sound track channel of the Moviola. The modification in no way affects use of the Moviola for optical sound tracks. Approximate cost for converting a 35mm. Moviola for magnetically recorded 35mm. film is \$110.00, according to Mark Surrurier, company head. Moviola's also can be converted for 17½mm. (slit 35mm.) magnetic film at slight additional cost.

The magnetic pickup head is mounted on gate part No. 4039. It may also be mounted in different positions across the film channel, in order to accommodate the different recording positions on 35mm. film which are now in use. In the current conversion, the film runs through the Moviola with the magnetic coating "up" in the gate.

Majors Now Using Magnetic Recorders

Most of the studios in Hollywood are equipped with at least one 35mm. magnetic recording machine capable of operation in synchronism with a camera or projector. Some studios have gained additional operating experience through the use of tape recorders in applications where synchronism was not essential.

Extensive laboratory tests and limited studio use have established that magnetic recording is of considerable importance for all types of work where re-recording is involved. Excellent frequency response up to 15,000 cycles has been obtained with an inherent ground-noise-to-signal ratio of 50 db or better. Ground noise does not appear to increase with film usage and the magnetic sound record is long-lived. Other advantages include film re-usage, immediate playback, elimination of lightfast requirements, and simple operation. Important economies can be realized by the reduction of film and processing costs.

Re-recording operations at Warner studios were simplified and reduced in cost by first combining up to 20 sound-effects tracks into a single reel of magnetic film. In the final re-recording operation two magnetic sound tracks were made simultaneously: one containing all the speech, music, and sound effects, and the other having only the combined music and sound effects. The latter track is then available for making 16mm. versions and for the use of the foreign department in combining the music and sound-effects track with a foreign-speech track.—S.M.P.E. Progress Report.

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Current Assignments of A.S.C. Members



Major film productions on which members of the American Society of Cinematographers were engaged as directors of photography during the past month.

Columbia

- CHARLES LAWTON, "Rogues Of Sherwood Forest" (In color), with John Derrick, Diana Lynn, George MacReady and Gig Young. Gordon Douglas, director.
- BURNETT GUFFEY, "A Mother For May," with William Holden, Coleen Gray and Charles Winninger. Norman Foster, director.
- WILLIAM SNYDER, "The Petty Girl," with Robert Cummings, Joan Caulfield, and Elsa Lanchester. Henry Levin, director.
- IRA MORGAN, "Mark Of The Gorilla" (Katzman Prodn.) with Johnny Weismuller, Trudy Marshall. William Berke, director.

Independent

- BENJAMIN KLINE, "Tough Assignment," with Don Barry, Marjorie Steele and Steve Brody. Wm. Beaudine, director.
- ARCHIE STOUT, "Never Fear" (Filmmakers, Inc.) with Sally Forest, Keefe Brasselle and Rita Lupino. Ida Lupino, director.

M-G-M

- HAL ROSSEN, "Key To The City," with Clark Gable, Loretta Young, Frank Morgan and Marilyn Maxwell. George Sidney, director.
- JOSEPH RUTTENBERG and GEORGE FOLSEY, "The Big Hangover," with Van Johnson, Elizabeth Taylor, Fay Holden and Selena Royle. Norman Krasna, director.
- JOHN ALTON, "Devil's Doorway," with Robert Taylor, Paula Raymond, Marshall Thompson and Louis Calhern. Anthony Mann, director.
- HARRY STRADLING, "The Yellow Cab Man," with Red Skelton, Gloria DeHaven, Walter Slezak, James Gleason and Edward Arnold. Jack Donohue, director.
- CHARLES SCHOENBAUM, "Outriders," (In Color) with Joel McCrea, Arlene Dahl and Barry Sullivan. Roy Rowland, director.
- PAUL C. VOGEL, "You're Only Young Twice" (In Color), with Dean Stockwell, Scotty Beckett, Darryl Hickman and Leon Ames. William A. Wellman, director.
- JOSEPH RUTTENBERG, "The Miniver Sequel" (In Color—shooting in England), with Greer Garson, Walter Pidgeon, John Hodiak and Cathy O'Donnell. Henry Potter, director.
- RAY JUNE, "The Reformer And The Red-head," with June Allyson, Dick Powell, David Wayne and Cecil Kellaway. Norman Panama and Melvin Frank, directors.

Monogram

- WILLIAM A. SICKNER, "Wolf Hunters," with Kirby Grant, Helen Parrish, and Charles Lang. Oscar Boetticher, director.
- MARCEL LEPICARD, "Masterminds," with Leo Gorcey, Huntz Hall and Gabriel Dell. Jean Yarbrough, director.
- HARRY NEUMANN, "Six-Gun Mesa," with Johnny Mack Brown, Gail Davis, and Milburn Moranti. Wallace W. Fox, director.

Paramount

- CHARLES LANG, "Fancy Pants," (In Color) with Bob Hope, Lucille Ball, Lea Penman,

Jack Kirkland and Eric Blore. George Marshall, director.

- GEORGE BARNES, "Let's Dance" (In Color) with Betty Hutton, Fred Astair, Roland Young, Barton MacLane and Ruth Warrick. Norman McLeod, director.

- JOHN SEITZ, "United States Mail," with Alan Ladd and Phyllis Calvert. Lewis Allen, director.

- JAMES WONG HOWE, "Eagle And The Hawk" (In Color) with John Payne, Rhonda Fleming, Dennis O'Keefe and Thomas Gomez. Lewis R. Foster, director.

- VICTOR MILNER, "September" (Hal Wallis Prodn.—Shooting in Europe) with Joan Fontaine and Joseph Cotten. William Dieterle, director.

R-K-O

- MILTON KRASNER, "Christmas Gift," with Robert Mitchum, Janet Leigh, Wendell Corey and Gordon Gebert. Don Hartman, director.

- RUSSELL HARLAN, "Tarzan And The Slave Girl" (Sol Lesser Prodn.) with Lex Barker and Vanessa Brown. Lee Sholem, director.

- RAY RENNAHAN, "The White Tower" (Shooting in Europe) with Glenn Ford, Valli, Claude Rains, Sir Cedric Hardwicke, Oscar Homolka, Lloyd Bridges, Ted Tetzlaff, director.

- EDWARD CRONJAGER, "Daybreak" (Busch Prodn.) with Lew Ayers, Teresa Wright and Jacqueline White. John Sturges, director.

- LEE GARMES, "With All My Love" (Samuel Goldwyn Prodn.) with Ann Blyth, Joan Evans, Farley Granger, Donald Cook, Jane Wyatt, Ann Dvorak and Phyllis Kirk. David Miller, director.

- FREDDIE YOUNG, "Treasure Island" (Walt Disney Prodn.—Shooting in England) with Bobby Driscoll, Robert Newton, Basil Sidney and Denis O'Dea. Byron Haskin, director.

- NICHOLAS MUSURACA, "Dynamite Trail," with Tim Holt, Richard Martin, Lynne Roberts and Regis Toomey. Lew Landers, director.

- HARRY WILD, "Carriage Entrance," with Robert Mitchum, Ava Gardner and Melvyn Douglas. Robert Stevenson, director.

20th Century-Fox

- CHARLES G. CLARKE, "Two Corridors East" (Shooting in Berlin, Germany) with Montgomery Clift, Paul Douglas, Cornella Burch and Burni Loebel. George Seaton, director.

- HARRY JACKSON, "A Ticket To Tomahawk" (In Color) with Dan Dailey, Ann Baxter, Rory Calhoun and Walter Brennan. Richard Sale, director.

- FRED JACKMAN, JR., "The Cariboo Trail" (Nat Holt Prodn.—In Color) with Randolph Scott, Bill Williams, Victor Jory and Karin Booth. Edwin L. Marin, director.

- ARTHUR MILLER, "The Gun Fighter," with Gregory Peck, Helen Wescott, Jean Parker and Skip Homeier. Henry King, director.

- JOSEPH LASHELLE, "The Big Fall," with John Garfield, Micheline Prele, Luther Adler and Orley Lindgren. Jean Negulesco, director.

United Artists

- ERNEST LASZLO, "Dead On Arrival" (Harry M. Popkin Prodn.) with Edmond O'Brien, Pamela Britton, Luther Adler, Wm. Ching and Beverly Campbell. Rudolph Mate, director.

- STANLEY CORTEZ, "The Whip" (Hal E. Chester Prodn.) with Dan Duryea, Gale Storm, Herbert Marshall and Howard Da-Silva. Cyril Endfield, director.

- PAUL IVANO, "Champagne For Caesar" (Popkin Prodn.) with Ronald Colman, Celeste Holm, Barbara Britton, Vincent Price and Art Linkletter. Richard Whorf, director.

Universal-International

- WILLIAM DANIELS, "Fugitive From Terror," with Ida Lupino, Stephen McNally, Howard Duff, Peggy Dow and John Litel. Michael Gordon, director.

- MAURY GERTZMAN, "The Bowie Knife" (In Color) with Maureen O'Hara, MacDonald Carey, Charles Drake. George Sherman, director.

- IRVING GLASSBERG, "The Big Frame," with Scott Brady, John Russell, Peggy Dow and Dorothy Hart. William Castle, director.

- RUSSELL METTY, "Sierra" (In Color) with Audie Murphy, Wanda Hendrix, Anthony Curtis, Burl Ives. Alfred E. Green, director.

- CLIFFORD STINE, "Outside The Wall," with Richard Basehart, Marilyn Maxwell, Dorothy Hart. Crane Wilbur, director.

- WILLIAM DANIELS, "Deported" (Shooting in Italy) with Marta Toren, Jeff Chandler. Robert Siodmak, director.

- MAURY GERTZMAN, "Double Crossbones," (In Color) with Helena Carter, Donald O'Connor, John Emery. Charles Barton, director.

Warner Brothers

- TED McCORD, "Young Man With A Horn," with Kirk Douglas, Lauren Bacall, Doris Day, Hoagy Carmichael, and Juano Hernandez. Michael Curtiz, director.

- CARL GUTHRIE, "Locked In," with Eleanor Parker, Agnes Moorhead, Gertrude Michael, Ellen Corby. John Cromwell, director.

- ERNEST HALLER, "Always Leave Them Laughing," with Milton Berle, Virginia Mayo, Ruth Roman, and Bert Lahr. Roy Del Ruth, director.

- WILFRID CLINE, "The Daughter Of Rosie O'Grady" (In Color) with June Haver, Gordon MacRae, Gene Nelson, James Barton. David Butler, director.

- SIDNEY HICKOX, "After Nightfall," with David Brian, Marjorie Reynolds, Claudia Barrett, John Archer. Peter Godfrey, director.

BALANCING TV CAMERA TUBES

(Continued from Page 362)

consisting of a variety of test patterns and then attempting to check and compare those patterns against their images as they appear on the monitor, only five of the many important camera characteristics and adjustments can be checked.

With the Video Analyzer, fifteen checks can be made quickly, easily and accurately. A cameraman, once he is acquainted with the Analyzer, can adjust and align a camera in about ten minutes. The fifteen checks are:

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2. Mechanical Alignment of Image Orthicon Assembly.
3. Old Mosaic (or previously scanned target area).
4. Vertical and Horizontal Image Size.
5. Vertical and Horizontal Linearity.
6. Vertical and Horizontal Centering.
7. Vertical and Horizontal Shading.
8. Resolution (Both horizontal and vertical by rotating analyzer).
9. Color Response.
10. Sensitivity.
11. Saturation Point.
12. Contrast Range.
13. Frequency Distortion.
14. "S" Distortion (Image section electrical adjustment).
15. Scanning Tilt.

To check one camera against another to insure the use of matched cameras on a multi-camera show, a Video Analyzer is mounted on each camera and the cameras switched from one to another on the master monitor. In this way, the image from each camera can be studied and compared on the one master monitor.

Similarly control monitors may be checked against the master monitor and adjusted to give comparable images. The camera viewfinders should also be checked against the master monitor and adjusted to give comparable images. With all monitors giving comparable images, cameramen, directors, and program manager have a uniform basis for judging image quality.

Hypersensitizing Film

Russian scientists, making extensive exploration in the use of mercury vapors for hypersensitizing photographic films, have reported the results of tests conducted with typical emulsions which were studied sensitometrically with a light source having a color temperature of 5000° K. They report mercury vapor treatment of negative and positive motion picture film resulted in an average increase of sensitivity of from 1.2 to 3.6 times. They found that the effect is more pronounced the slower the original speed of the emulsion. Also that emulsions hypersensitized generally showed a diminishing effect of the treatment after 24 hours and that it disappears entirely after a period of nine days.

On the other hand, where the hypersensitized film is exposed, but not developed, the hypersensitized effect remained even after nine days. Other observations revealed that velocity of film development is increased by mercury treatment in the first stages, and that in the later stages, mercury treated emulsions develop more slowly than untreated ones, and that the increase of the bromide content in the film emulsion enhances the effect of hypersensitizing.

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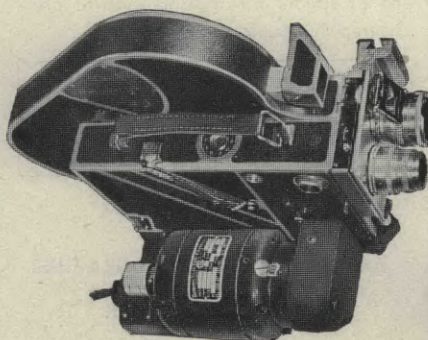
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